

AMERICAN BEE JOURNAL

OCTOBER, 1916

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The Winning Honey Exhibit at the Iowa State Fair

Beekeeper's Guide, by A. J. Cook—This book on bees is also known as the "Manual of the Apiary." It is instructive and interesting, as well as practically scientific. It has 544 pages and 205 illustrations. Bound in cloth. Price, postpaid, \$1.20; or with a year's subscription to the American Bee Journal, both for \$1.80.

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American Bee Journal

Grading Rules of the Colorado Honey- Producers' Association, Denver, Colo., Adopted Feb. 8, 1915.

(All honey sold through the Colorado Honey-Producers' Association must be graded by these rules.)

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned. No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The proof each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.
Honey in badly stained or mildewed sections.
Honey showing signs of granulation.
Leaking, injured or patched up sections.
Sections containing honey-dew.
Sections with more than 50 uncapped cells or a less number of empty cells.
Sections weighing less than the minimum weight.
All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped, d or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.
Unripe or fermenting honey, weighing less than 12 pounds per gallon.
Honey contaminated by excessive use of smoke.
Honey not properly strained.
Honey contaminated by honey-dew.



NEW BINGHAM BEE SMOKER

Patented

BINGHAM BEE-SMOKER

Nearly forty years on the market and the standard in this and many foreign countries. It is the all important tool of the most extensive honey-producers of the world. For sale direct or by all dealers in Beekeepers' Supplies.

Smoke Engine, 4-inch stove.....	28 oz.	\$1.25
Doctor, 3½-in. h stove.....	26 oz.	.85
Two larger sizes in copper extra.....		.50
Conqueror, 4-inch stove.....	23 oz.	.75
Little Wonder, 2½-inch stove.....	16 oz.	.50

Hinged cover on the two larger sizes postage extra.

A. G. WOODMAN CO., Grand Rapids, Mich.

TIN HONEY CANS—LOW PRICES

5-lb. friction-top pails, lots of 50 at \$2.75; 100 lots, \$5.20; crates of 201 at \$10.
10-lb. friction top pails, lots of 50 at \$4.00; 100 lots, \$7.50; crates of 113 at 8.30; 565 at \$40.
f. o. b. Chicago.
60-lb. cans, two in a case, 70c per case; quantity lots, 67c per case; crates of 50 at \$12 f. o. b. Chicago or Ohio factory. Prompt shipments are being made at this time.

A. G. WOODMAN CO.

Grand Rapids, Michigan

The CANADIAN HORTICULTURIST AND BEEKEEPER

The only bee publication in Canada

It is the official organ of the Ontario Beekeepers' Association, and has incorporated with it the former Canadian Bee Journal.
Beekeeping and Horticulture in its various branches are effectively combined to form a live, attractive, and practical monthly magazine.

Well illustrated and up-to-date. Subscription price postpaid.
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Sample copy sent free on request.

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Comb and Extracted for our regular trade. Last year's sales, \$2,936,504 00.

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Established 1894

FRUIT AND VEGETABLES

119 W. South Water St. Chicago

American Bee Journal

The New Edition of the A. B. C. and X. Y. Z. of Bee Culture

BIGGER AND BETTER

A large number of the old articles have been rewritten. Many new articles that never appeared before in any former edition occur in this one.

THE CHEMISTRY OF HONEY

A. Hugh Bryan, formerly connected with the Bureau of Chemistry, Washington, D. C., and who at the time made a speciality of honey, has written the articles dealing with the chemistry of honey, glucose, invert sugar, nectars, adulterations, etc. He has also written a special article for the benefit of chemists, on how to analyze honey.

Since the introduction of artificial invert sugars, new methods have to be employed; and these are set forth in this new edition so that any chemist will be able to use the very latest information that has been available to the Bureau of Chemistry, Washington, D. C.

BEE BOTANY

This is being handled by John H. Lovell, of Waldoboro, Maine, a beekeeper, botanist, been and an entomologist. Some new species have been added, and in other cases the descriptions have made more complete.

PRACTICAL ARTICLES

These have been revised and rewritten by the editors of GLEANINGS. All the latest methods of management have been incorporated. Articles on bee diseases have received entirely new treatment, especially those relating to European foulbrood and the Isle of Wight disease.

WINTERING

The articles on wintering will include the latest discoveries of the Bureau of Entomology pertaining to winter temperatures, winter activities and winter packing.

The new volume will contain something over 900 pages, and will sell for \$2.50. It will be ready for delivery about January 1.

THE A. I. ROOT COMPANY, MEDINA, OHIO

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, 1, \$1.00; 6, \$5.00; 12, \$9.00
Select untested, 1, \$1.25; 6, \$6.00; 12, \$11.00

Safe arrival and satisfaction guaranteed. Circular free.

I am now filling orders by return mail.

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Queen Breeder Rt. 1, Morgan, Ky.

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Everybody knows Campbell, the father of dry farming. Everybody knows that he started this great movement for Scientific Farming that is changing the desert into a garden. But everybody does not know that there is a great school, the

CAMPBELL CORRESPONDENCE SCHOOL OF SOIL CULTURE

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Billings, Montana

REPRINT OF OLD 1853 EDITION OF

Langstroth on the Hive and Honey Bee

This book is very interesting when read in connection with the Revised Langstroth. Many are surprised at the number of devices mentioned by Langstroth years ago, which are re-written as new today. We offer the old reprint at a special postpaid price of \$1.00.

Reprint of Langstroth, \$1.00	Both postpaid \$1.85	Reprint of Langstroth, \$1.00	Both for \$1.50
Langstroth Revised, \$1.20		American Bee Journal, \$1.00	

All three above for \$2.50

American Bee Journal, Hamilton, Illinois.

HONEY JARS

25 1-pound screw cap flint glass jars; 1 gross crates, \$4.75. Discount on quantities. We carry several styles of jars.

Light honey, clover flavor, two 60-pound cans, 9 cts. per pound. Sage honey, 9 cts. per pound. Sample, 10 cts. White comb honey.

Catalog of bees and supplies free.

I. J. STRINGHAM

105 Park Place, N. Y.

APIARIES: Glen Cove, L. I.

Shipping Cases for Comb Honey

Don't make the mistake of putting a fine lot of section honey in poor shipping cases. It will lower the price to you and damage your future sales. "falcon" cases are A No. 1, and will be a credit to any crop of honey. Prices are as follows:

Shipping Cases in Flat, Without Glass			
No.		10	100
1	holding 24 sections, 4 1/4 x 1 1/2, showing 4	2 00	18 00
3	holding 12 sections, 4 1/4 x 1 1/2, showing 3	1 30	11 00
1 1/2	holding 24 sections, 4 1/4 x 1 1/2, showing 4	1 90	17 00
6	holding 24 sections, 3 3/4 x 1 1/2, showing 4	1 80	16 00
8	holding 24 sections, 4 x 5 x 1 1/2, showing 4	1 80	16 00

Shipping Cases, With Glass				
Number and description	Nid	In flat, with 3-in. glass		
		1	10	100
11 Same as No. 1.....	35	.25	\$2 30	21 00
13 Same as No. 3.....	22	.15	1 40	12 50
11 1/2 Same as No. 1 1/2.....	35	.25	2 20	20 00
16 Same as No. 6.....	30	.22	2 10	19 00
18 Same as No. 8.....	30	.22	2 05	19 00

Red Catalog, Postpaid

Dealers Everywhere

"Simplified Beekeeping," postpaid

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

WANTED HONEY

Both Comb and Extracted

If comb honey, state grade and how it is put up, and your lowest price delivered Cincinnati. Extracted honey, mail a fair size sample, state how it is put up, and your lowest price delivered Cincinnati.

If prices are right, we can use unlimited quantities.

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Get our "Scarified" sweet clover seed which will germinate from 85 to 95 percent the first year and thus insure you a good stand right from the start. By sowing our seed you will save money, as it only takes about half as much scarified to sow an acre as ordinary hulled seed.

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	1 lb.	10 lbs.	30 lbs.	100 lbs.	Per bu. 60 lbs.	5 bu. lots per bu.	10 bu. lots per bu.	Lbs. per acre
Unhulled White Sweet Clover Recleaned	25c	\$2.00	\$5.10	\$16.00		\$ 4.80	\$ 4.50	25 to 30
Hulled White Sweet Clover recleaned and scarified	30c	2.75	6.75	22.50	\$13.50	13.00	12.50	6 to 10
Hulled Yellow Sweet Clover, recleaned and scarified "Melilotus Officinalis"	20c	1.80	5.10	17.00	10.20	9.50	9.00	8 to 12

When seed is wanted by parcel post, be sure to include postage. Bags will be included in the weight in parcel post shipments.

PLEASE NOTE—All of our seed is thoroughly cleaned. The scarifying process usually breaks some of the seeds and we remove all broken seeds. This is an important saving to you. Samples on application.

YELLOW SWEET CLOVER—Many people fail to recognize the value of the biennial yellow sweet clover as a honey plant. The fact that it blooms two weeks earlier than the white variety makes it especially valuable to the beekeeper.

Be sure, however, to get the biennial variety as quoted above.

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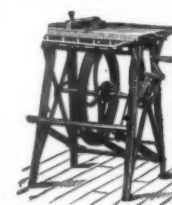


Is the Texas Queens. Send me your orders early for Italian and Carniolan. Queens, \$8.00 per doz. Bees per pound, \$1.50.

CIRCULAR FREE

Grant Anderson, Rio Hondo, Texas

BARNES' Foot-Power Machinery



Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

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How About Next Year?

The season of 1916, just closed, has been a most unusual one. Beekeepers who did not fortify themselves early in the season by securing their hives, sections and other goods and having their equipment ready for the bees, found that when the honey season was upon them that they were up against the following conditions:

Everybody wanted bee goods—dealers had depleted stocks on account of the unusual demand

—manufacturers were several weeks behind on orders—their factories were working overtime,

some beekeepers were delayed, some disappointed, some got their goods when it was too late.

Now, Mr. Beekeeper, What are You Going to Do About Next Season?

Prospects for a big Bee and Honey Season next year were never better than they are right now. PREPARE!! Order your goods this fall. Write us or our dealer nearest you for a list of new prices, owing to advances in raw material.

If you are not on our mailing list, write us at once and we will send you a catalog containing name of the distributor nearest you, and in this way you will also be sure to receive a copy of our new 1917 catalog when it is issued.

LEWIS

Hives and Sections and all other goods are made from the best material and are scientifically manufactured.

OUR GUARANTEE

We absolutely guarantee our goods to be perfectly manufactured of the best material for the purpose. On examination, if our goods are not as represented, we do not ask you to keep them. Return same at our expense and we will refund your money, including any transportation charges you have paid. If you purchase our goods from one of our distributors, the same guarantee holds good, as we stand back of them.

G. B. LEWIS COMPANY

Watertown, Wisconsin, U. S. A.

Send for catalog giving name of distributor nearest you



Vol. LVI.—No. 10

HAMILTON, ILL., OCTOBER, 1916

MONTHLY, \$1.00 A YEAR

NOTES FROM TENNESSEE

Glimpses of Dixie Beekeeping as Seen By Our Staff Correspondent

Who has not heard the praise of sunny Tennessee? In the north are broad fields of grass where graze sleek herds of fine dairy cattle, while along her southern borders are vast fields of cotton. Her corn crops in some sections would do credit to the most favored corn producing section of Illinois, while in other counties tobacco and peanuts are grown in abundance. Tennessee lies in that favored latitude where it is not too warm for the crops which make the north rich, nor yet too cold for the staple crops of the southland. Few states can equal her in the diversity of her productions, and none can excel her in the multitude of good things which she produces. In her northern hills apple orchards of vast acreage are found, while in her southern counties figs may be gathered by her people from their own trees. Choose what you will, unless it be a

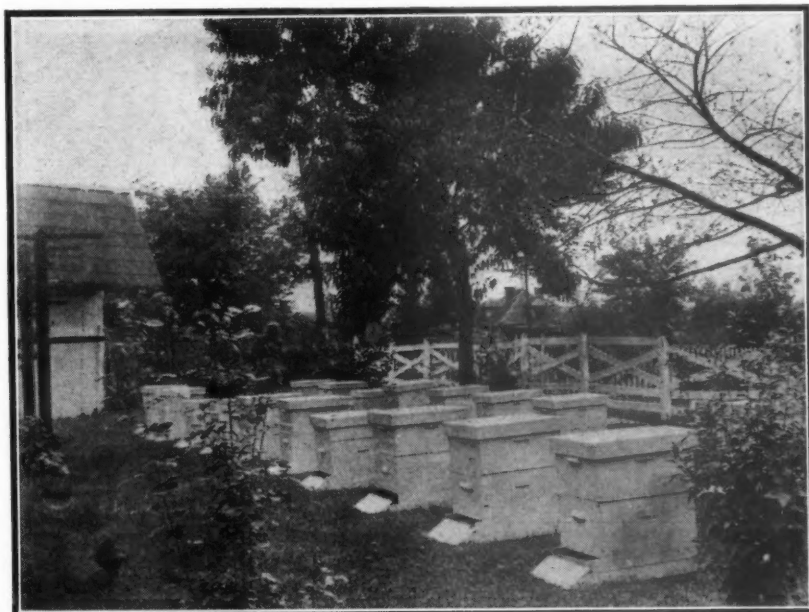
semiotropical fruit, almost anything that can be grown with profit in the United States, you will find a place adapted to it in Tennessee.

An invitation to the field meetings of the Tennessee Beekeeper's Association brought the desired opportunity to visit a section which the writer had long wished to see. Arriving at Nashville a day ahead of the first of the meetings gave time to visit the queen-rearing apiaries of J. M. and Ben G. Davis, father and son, who are among the best known beekeepers of the southland. We have been familiar with Ben Davis apples in the north for many years but the Tennessee Ben Davis declines the honor of being the namesake of the apple or of having it named for him. Whatever the quality of the apple, the Davis queens have a splendid reputation in many states and it was a real treat to visit the apiaries and learn something of

the methods of the men who send out from eight to ten thousand queens per year. There were so many things of interest to see, that we will have more to say about their methods in another article. J. M. Davis has been engaged in queen-rearing for forty-four years continuously and is probably the oldest queen breeder in the States. He is now engaged in rearing three-banded queens exclusively, since his son Ben took over the goldens. The apiaries are several miles apart to avoid possible mixing of the golden and three-banded stock.

The field meeting was held at the home of the Dixie queen, Mrs. Grace Allen, who is a most charming hostess. A good crowd was present and the usual field day discussions were followed out. Mr. and Mrs. Allen treated the visitors to a picnic dinner on the lawn, where the demonstrations and discussions were continued until late afternoon. A number of prominent men whose names are familiar were in attendance at the Nashville meeting. Commissioner of Agriculture, Bryson, was present and welcomed the visitors to Nashville. State Entomologist, Bentley, Dr. J. S. Ward, the State Bee Inspector; J. M. Buchanan, secretary of the Association; the Drane boys of Memphis who are at present in the army, and numerous others, assisted in the demonstrations or talked on subjects of timely interest. The meeting was fully equal to the best which the writer has ever attended. After the meeting a drive with Dr. Ward about the city through the parks gave an opportunity to see some of the beauty spots of the region.

Dr. E. F. Phillips and E. R. Root were both present and together with several of the Tennessee beemen made quite a party the following day for the meeting at Hollow Rock. Doctor Phillips, Mr. Root and the writer were called upon at each of the three points for talks, and everywhere we were shown every possible courtesy. At Hollow Rock the meeting was held at the home of Mr. L. E. Smith, where all the visitors were treated to a bountiful



THE ALLEN APIARY IN THE CITY OF NASHVILLE, TENN.

American Bee Journal

ful dinner served in true southern style. The attendance was small at Hollow Rock, since there are not many beekeepers in that section, but the day was pleasantly spent in discussions and in visiting among those present.

At Memphis, W. E. Drane, who accompanied the party home on a short furlough, took us for an auto ride about the city. We were especially interested in the cotton fields and the big warehouses where the cotton is stored for market. The beekeepers

sus, unless the northern beekeepers have a care, Tennessee will shortly be at the head of the states in honey production.

Selling Honey

BY A. F. BONNEY.

The sentiment of beekeepers seems to be crystalizing into the proposition that no one rule will apply for all men. He with a crop of a few hundred pounds cannot afford to

advertise but must depend on the local market and this condition persists until the crop is so large that it must be disposed of in lots of a thousand or more pounds to one party. The sooner all beekeepers understand this the quicker each will seek his own field according to size of crop.

To increase my local trade I am now circulating advertisements as follows:

PRIZE CAKE.

"To the person sending me the best Honey Cake of any kind, made of BONNEY HONEY, before December 15th, I will send a gallon can of BONNEY HONEY, postage paid as a free gift.

THE BUCK GROVE APIARY,
BUCK GROVE, IOWA.
DR BONNEY, King Bee.

I have already begun to see the results of the ad and when the present hot spell of weather is over I expect to see many calls for honey for cake purposes.

Another thing the small producer can do to increase sales: Advertise like this:

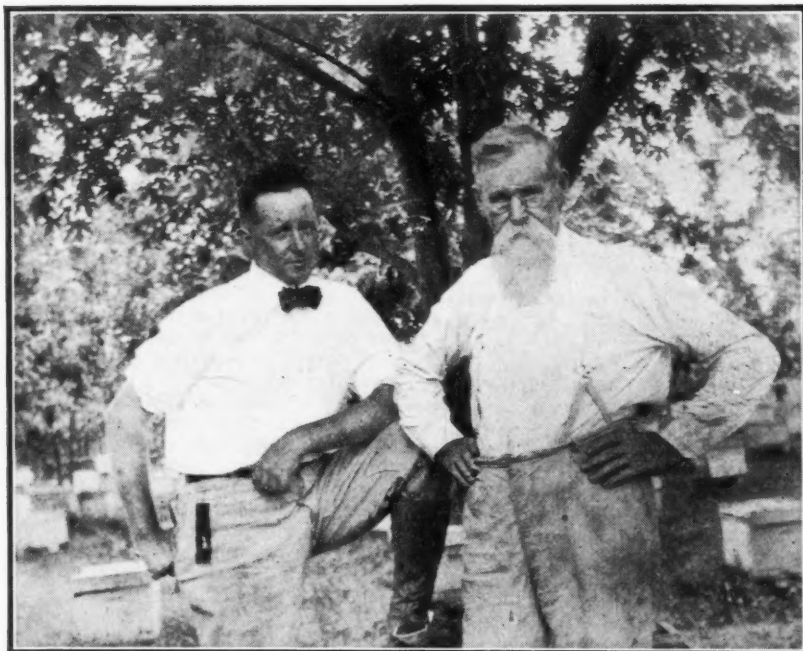
"If you will bring your own container, I will sell you BONNEY HONEY for 10 cents a pound. It is delicious. Dr. BONNEY, King Bee."

It matters not if you are in town or on the farm, people find you with Mason jars, Karo cans and even water buckets, and you will sell one to fifty pounds, just as I do.

Here follows the principal cake recipe I send out as I am very fond of it, and hope to get in enough to last me all winter.

THE FINEST GINGERBREAD MAN EVER
TASTED.

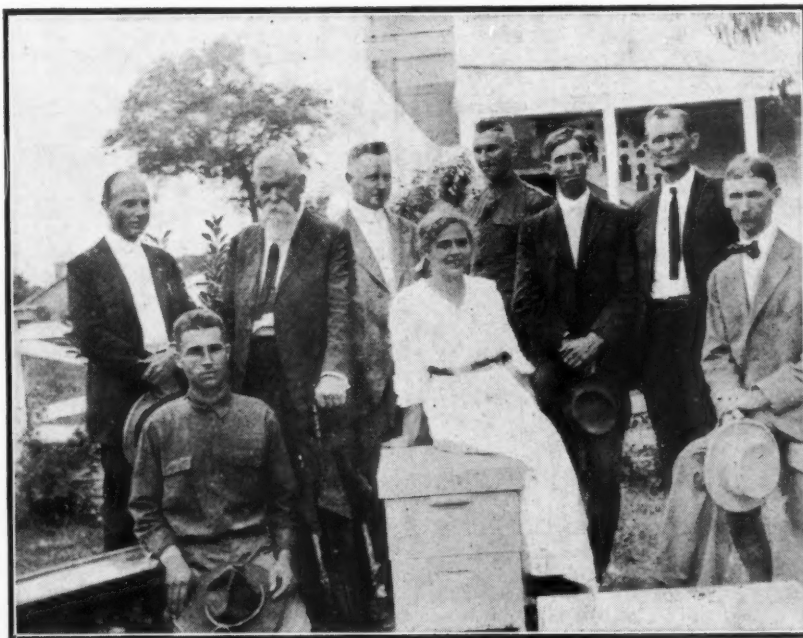
"Take one cup BONNEY HONEY, half cup dark molasses, 1 cup but-



J. M. DAVIS AND SON, BEN DAVIS

came from some distance to attend this meeting several being present from Mississippi. The problems of this section are somewhat different from those which concern us here in the north. In a section where fig trees grow without protection, little attention is given to wintering the bees further than to provide them with sufficient stores. There is much honey gathered which is of poor quality and some care is necessary to keep it separate from the better honey, Mr. Drane suggested that the beekeepers of that section should form an association for the purpose of grading and blending their honey and thus realize the most possible for their product.

In Tennessee, the State Board of Agriculture and the State University are taking an interest in the development of the honey-producing industry so that we look for an increasing interest in up-to-date methods. Like other states, Tennessee still has a large number of beekeepers who have not yet adopted movable frames and full sheets of foundation, but the Beekeeper's Association is encouraging every movement which looks to the betterment of the industry. With all these influences at work and with the high place she already holds among the states as shown by the cen-



SOME WELL KNOWN TENNESSEE BEEKEEPERS

Upper row—G. M. Bentley, J. M. Davis, Ben G. Davis, Thos. G. Drane, I. N. Banks, Dr. J. S. Ward, J. M. Buchanan. Lower row—W. E. Drane, Mrs. Grace Allen.

American Bee Journal

ter, 1 cup sweet milk, a teaspoonful each ginger and allspice. Heat until butter melts, add a teaspoon of soda and flour to make batter. Cook in quick oven." Buck Grove, Ia.

Skunks

BY J. L. BYER.

In a former issue of *Gleanings*, Mr. Frank C. Pellett discusses our friend of malodorous reputation the common skunk. Friend Pellett is inclined to think that the skunk is a benefit rather than an enemy to mankind, and naturalists in general may agree with him, as the animal is strictly carnivorous, and I believe to a great extent insectivorous, destroying great quantities of grasshoppers, etc. The skunk occasionally visits chicken yards, and is also very fond of eggs as well as of the chickens.

For the number of skunks that are in the country surprisingly few visits are made to poultry yards, so Mr. Pellett is right when he says that only a very few of the animals learn to kill poultry. But it is as beekeepers that we are naturally most interested, and I dare say that Mr. Skunk has few friends among the fraternity especially if some colonies have been ruined, as has often happened. One peculiar thing, and it is good that it is so, is that when a skunk starts to visit an apiary, it usually goes to the same hive every night and signs soon show his visits. The grass is soiled and the ground in front of the hive is clawed more or less. Often the entrance to the hive is scratched.

The past fall, the skunks were more plentiful than usual, and I heard numerous complaints of their depredations. At the Cashell yard I caught two, but not before the colonies were pretty well depleted of bees.

They are easy to catch. Fasten a steel trap to the end of a 12-foot pole and place the trap in front of the hive. They may be dragged away and shot or otherwise disposed of. As long as they are not struck while in the trap they will not smell. Keep dogs away or you

will have trouble. If a stream is near a convenient way to dispose of them is to toss them into the water and by the aid of a long pole hold them under until drowned.

A friend of mine told me of catching one in front of a hive, and on going to the yard in the morning he was surprised and amused to see how little the skunk seemed to mind having one of his legs fast in a steel trap. Instead of being alarmed or showing signs of pain, he was busily feeding on bees and made no attempt to let up when my friend appeared. He would shove one foot into the entrance, and when the bees swarmed out he would strike and scrape them until they were down on the ground. He seemingly aimed to kill them before eating them, and this scratching explained the appearance of the ground and grass in front of hives visited by skunks.

If one does not wish to trap them, put a little strychnine in an egg in front of the hive visited. That will do the trick, but exposed poison is always a source of danger. I have had reports of skunks doing damage as far west as California.

When in New York State I was told they had done a lot of damage during the past season. Evidently they had a large range of territory, and collectively they must do some injury to the beekeeping industry each season. Unfortunately for the skunk, in the northern latitudes at least, they have a valuable pelt, and they are persistently hunted, so are not apt to increase in numbers; in fact, it is doubtful if they will hold their own. One of the common ways of getting their pelts is to find their dens in the winter (skunks are gregarious in their habits), place some carbon-bisulfide in the mouth of



A FIELD DAY GROUP IN TENNESSEE



A GROUP OF TENNESSEE BEEKEEPERS AT THE MEMPHIS FIELD MEET

the den and then tightly close all holes with earth. The next morning the skunks are dug out and they may be handled without any offensive odor whatever.

Markham, Ont.

South African Beekeeping

A recent issue of the *Farmer's Weekly*, a South African paper, had a two page article on bees and apiculture. A large portion of this space was devoted to extolling the virtues of honey and its value as food. In another issue of the same paper, one of its subscribers discusses the beekeeping situation. Foul brood is unknown in South Africa, and the writer advocates the importation of Italian queens into that country only on a limited scale and suggests that the Government quarantine such queens and have same examined before they are turned over to the beekeeping public.

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C. P. Dadant, Editor
Dr. C. C. Miller, Associate Editor,
Frank C. Pellett, Staff Correspondent.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is \$1.00 a year in the United States of America and Mexico; 3 years, \$2.25; 5 years, \$3.00; in Canada, 10 cents extra, and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which subscription is paid. For instance, "dec 16" on your label shows that it is paid to the end of December, 1916.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address, which shows that the money has been received and credited. In case of errors, please write us.

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THE EDITOR'S VIEWPOINT

Sweet Clover vs. Ragweed and Hay Fever

In Gleanings for July 15, our friend and contributor, Mr. J. E. Crane, has a paragraph entitled: "Let sweet clover kill out the weeds." When we see the numerous sufferers of hay fever during the months of August and September and realize that the main cause of that trouble is the pest "ragweed", which infests our stubble fields, our roadsides and our pastures we see the need of repeating: "Let sweet clover kill out the weeds." Sweet clover does kill out the ragweed where it is given a chance and we hope every man who has anything to do with weeds will help this work along. Sweet clover is easily eradicated when not wanted, for it is a biennial and does not make seed the first year. It produces honey and good cattle feed while the ragweed is of no use to anyone and injurious to many.

Screen Wire for Uniting

One of our subscribers reports success with uniting colonies by means of wire screen. One colony is placed over the other the same as is done by the newspaper plan, screen wire being substituted for the newspaper. In 24 hours the screen may be removed and the two colonies will unite peacefully.

It Pays to Advertise

Our front cover gives a good representation of the honey exhibit at the Iowa State Fair which won the sweepstakes prizes in 1916 for being the best exhibit. Interestingly Bert A. Brown, a Des Moines beekeeper took orders for a lot of honey at the fair, and got over \$100.00 in prices. With the active cooperation of his

wife, Mr. Brown has gradually increased his number of colonies of bees to the point where, if he chooses, he may give up his position in a large clothing store and be independent. Need we say that probably as large a factor as any in his success has been his forceful advertising?

More About Packing Bees

I am much interested in your article in the American Bee Journal for September on outdoor wintering and packing. My bees are kept about 100 rods from my residence and the labor of hauling 60 or 70 colonies to my cellar and then back to the yard year after year has induced me to try outdoor wintering.

My yard is located on a steep side hill facing the south and is well protected from cold north winds, so that bees ought to winter with little protection. You speak of using straw mats. I have never seen any of them and wish you would advise me where they can be bought and the price. I have just received a sample of flax board $\frac{3}{4}$ inch thick. This board is set to fit the top of the hive and placed over the brood frames, but like the straw mats it is a stranger to me. I would like your answer to a few questions:

1st. What depth of super do you recommend to fill with packing? 2nd. Do you consider chaff as good as leaves for packing? 3rd. Would you consider my bees safe with mat and super of packing and the entire hive wrapped with burlap? 4th. What depth of bottom board do you use and how much open space for ventilation? 5th. Would you recommend packing each colony separate or place several in a winter case?

This letter raises several interesting questions which have been asked by others. For that reason I have thought best to reply through the Journal.

Our straw mats are home-made. The word "straw" is a misnomer in this case, as we use "slough grass"

which grows plentifully along the low lands of the Mississippi River. If we are not mistaken, this grass is called "spartina cynosuroides" by the botanists. It is tougher than rye straw and lasts a long time. Our reason for using a mat is that, while it covers the frames, it is not air-tight. The flax board $\frac{3}{4}$ inch thick is certainly good, the only objection we have to it being its stiffness. However if it may be laid flat over the combs it ought to be as good as the mats. Mats are used a great deal in Europe, to protect cold-frame hotbeds in frosty nights and we use them ourselves for that purpose. This is what gave us the idea of using them over the combs. We keep them on the hives, winter and summer for they turn off the rays of the sun as well as they protect the bees from the cold. The making of these mats is described on page 173 of Langstroth Revised.

Question 1. An ordinary shallow super filled with leaves is undoubtedly deep enough.

2. Chaff, cork chips, sawdust, shavings, old woolen carpets, even newspapers are good to absorb moisture in the super. The newspaper, however, would be gnawed by the bees. Mr. Langstroth used corn-cobs, tightly packed over the brood chamber. The reason we use forest leaves is that they are at hand and cost nothing but the trouble of gathering them.

3. Yes, tarred felt is very good. We would leave part of the front free, but it may be advisable to wrap the entire hive, in your climate, which is much colder than ours.

4. We have never used a deep bottom board, but the bottom board of Dr. Miller may prove good when there is a serious loss of bees that might clog the entrance. We usually leave the entire entrance open unless the colony is under average strength.

5. We prefer not to move any of our colonies for winter. Judging by what I have seen, the large winter case is not very popular, except in very cold climates. In Vermont, Mr. Crane and others use a chaff hive and in this way the lower part of the hive remains packed all the year round.

There is no royal road to wealth and no positively faultless method of wintering bees. The greatest fault with our method is the soaking of the leaves if there are many winter rains and the roof does not project sufficiently. But even then a frosty windbreak is better than a thin hive without protection. Hard winds cause depredation of heat and our method

American Bee Journal

protects the bees against them. The best argument in its favor is our success in wintering.

The Sweet Tooth

A statement of the candy business in Iowa, which recently appeared in the newspapers places the consumption of candy in that state at \$2.75 per capita and ice cream at \$1.50 per capita. Honey is often said to be a luxury even by the beekeepers, but surely it is no more a luxury than candy and ice cream. The population of Iowa is approximately two and a quarter millions. According to the above estimate they consume more than ten million dollars worth of candy and ice cream annually. From the above showing it is very evident that with proper attention to marketing, Iowa people would buy at least ten times the amount of honey now sold in that state. Iowa is probably fairly representative of the country at large in the consumption of candies and other sweets, and the amount of such products sold indicates something of the possibilities of the development of the honey markets.

The fellow who waits for a demand for his product, no matter what it is, never gets the best prices. It is the fellow who creates the demand who sets the prices. Eastman with an idea and business push has built up a business in Kodaks which nets millions annually. There never would have been a demand for Kodaks rather than any other particular kind of camera if Eastman had not forced it before the public and compelled attention. When the honey producers use the same business methods it will not be possible to keep up with the demand for good honey. The old scripture proverb about hiding a light under a bushel still applies.

A Good Idea

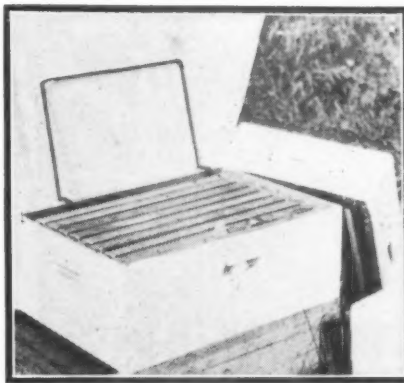
Members of the fruit grower's associations of Iowa and Nebraska held most interesting joint summer meetings. Instead of following the usual plan, a long automobile trip was arranged to visit representative orchards in both states. At Council Bluffs they were guests of the grape growers at a picnic dinner.

Now that so many beekeepers have automobiles why should not the National be able to arrange for several such trips in different parts of the country. In many places a circle of three to five hundred miles would make it possible to visit several large

apiaries and to learn something of new conditions and methods. The beekeepers of Iowa, Wisconsin, Minnesota and Illinois already have a joint organization for the purpose of a summer field meeting. They usually meet somewhere along the Mississippi river. There is room for a dozen or more such organizations where the beekeepers of two or more states could get together to their mutual advantage.

A Convenient Frame Support

What beekeeper has not found it trying to the patience to find a convenient place to support frames when making the spring examination of the apiary? It often happens that the first frame removed will be left out



DOCTOR LEONARD'S FRAME HOLDER



THE FRAME HOLDER WITH FRAME IN PLACE

during the examination of the remaining frames in order to leave room for easy movement. If the queen happens to be on this first frame she is in danger of being brushed off when it is set down in the grass. Combs are often damaged from falling, or they are in the way of the operator. L. D. Leonard, of Minnesota has a very convenient little frame for this purpose. It is light and inexpensive

as will be seen by the pictures. It is made of light strap iron with staple-shaped ends which fit nicely on the side of the hive. There is just enough slope to give the frame support without danger of falling, thus keeping it very nearly in a natural position. There is an upright point on each iron which supports the frame but yet makes it impossible to crush a single bee when the frame is put in place. When one sits down to open the hive this support can easily be attached to the opposite side where it is entirely out of the way yet within easy reach. This should be especially convenient for queen breeders and experimental apiaries where frequent examination is necessary and where there are seldom heavy supers to be removed. Almost any beekeeper will find it useful in the spring of the year when the early examinations are made.

Honey Market Conditions

Indications were, early in the season, that honey prices would be low, as low as last year at least, owing to the fact that a large amount of honey had been carried over. This combined with the fact that white clover regions were favored with an excellent flow tended to influence beekeepers in the white clover section at least, to sell their crop as early as possible, even at a low figure.

The governing feature of the honey market is supply and demand, and most of the larger honey markets get the bulk of their supply from the more important honey producing states of the west. A shortage, therefore, in western crops tends to make a shortage in the larger markets with the result that honey prices instead of being lower would range better. The sale of a considerable portion of the California crop at a figure in advance of that secured last season shows which way the price tendency is.

Then too, there is a shortage of fruit this year. Fruit crops for the country are far below normal. This will cause, if it has not already, a better price for fruits, and as a consequence, a slightly better demand for honey.

Comb honey producers seem to be possibly a little too numerous for the most economical supplying of the demand for this article. Being higher in price, comb honey is just that much nearer a luxury, while the cheaper extracted honey approaches a staple necessity as prices of other foods advance.

American Bee Journal

Winter Cases for Northern Latitudes

Methods of Packing Which Have Stood the Test in Ontario

Outdoor wintering is growing in favor with northern beekeepers. Many who formerly practiced cellar wintering are adopting some kind of packing case and leaving the bees in the same position all the year through. In Ontario this tendency is especially marked for many of the extensive beekeepers of that province now winter outside entirely. The quadruple case which holds four colonies is the one in most common use. The illustration shows a row of these

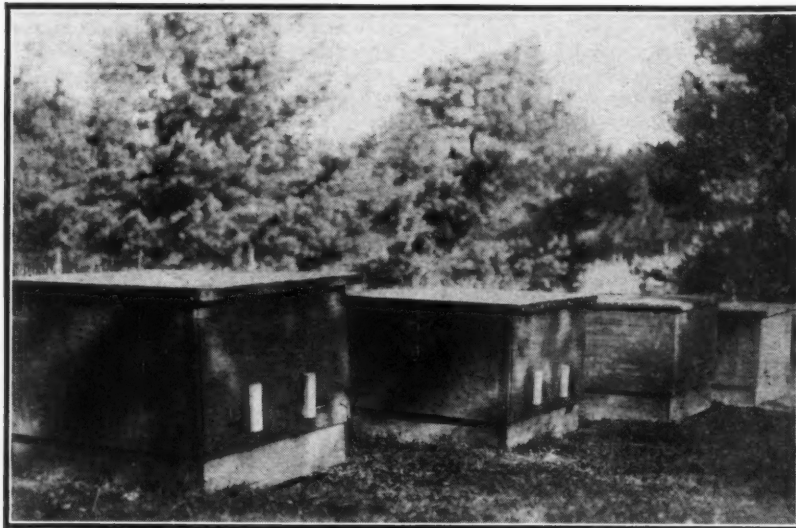
cases at the college apiary in Guelph. This large winter case has several advantages; four colonies are packed in a single case, thus keeping down the expense per colony and also giving each colony the additional warmth from the others. Much has been written about these cases of late and they are coming into use in many localities in the United States as well as Canada. When the writer visited the A. I. Root apiaries last winter he found about five hundred colonies

packed in these cases in the rear of the factory. The bees from the various outyards had been brought in and packed at the home apiary where it was more convenient to pack all together rather than to prepare them for winter in small yards.

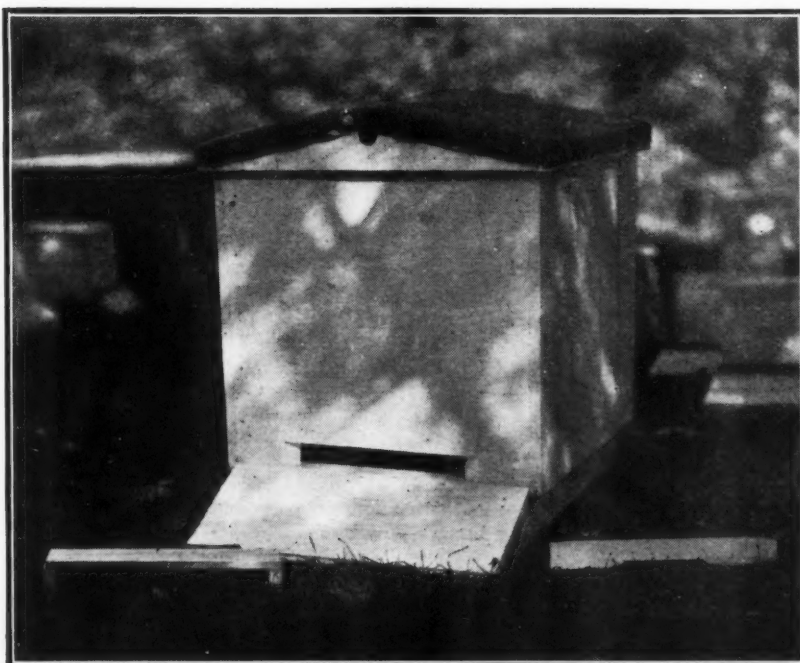
On a journey through Ontario the past summer long rows of these cases were seen in the rear of many apiaries. While the case is so large that it is heavy and rather inconvenient to handle it is still the most popular winter case in use.

THE KROUSE SINGLE COLONY CASE.

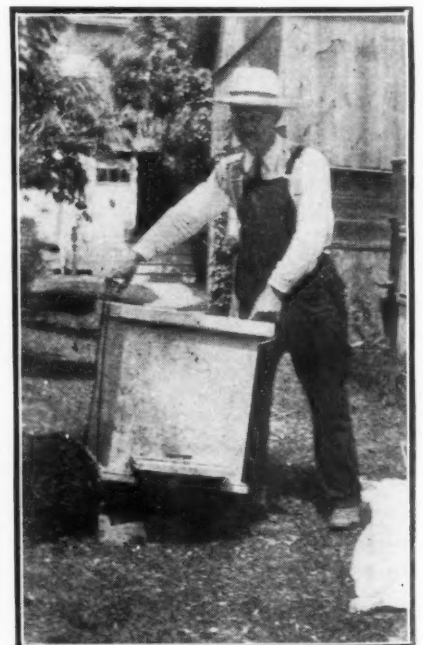
Another case that is to be found in several localities in Ontario is the case used by F. W. Krouse, President of the Ontario Beekeepers' Assoc at on. I do not know whether the case was original with Mr. Krouse but the writer saw so many more of them in his apiaries than elsewhere that it comes quite natural to call it the Krouse case. This holds but one colony and in the Krouse apiaries they are left in place the year around. The case is high enough to hold a double story hive. Many of the Krouse bees are on jumbo frames which are about equal to the Dadant frame in size. In early spring the packing is removed down to the level of the top of the hive to permit of examination of the colony, but packing below that point is left all summer. When the second story or super is put in place the cover of the packing case is put on again thus giving the hive excellent protection against the cold days of spring. This case is in effect a double walled hive since the ordinary hive



QUADRUPLE WINTERING CASES IN THE ONTARIO AGRICULTURAL COLLEGE APIARY AT GUELPH



THE KROUSE WINTERING CASE



IRONS FOR LIFTING THE HOSHAL CASE

American Bee Journal

is used for the inner one and six or eight inches of packing left between the walls. Mr. Krouse is very enthusiastic about the advantages of this case and all his colonies which now number near five hundred, in several yards, are in these single colony cases. Aside from the increased expense necessary to make a separate case for each hive there are some decided advantages in his method.

The writer uses a packing case which holds two colonies at his Iowa apiary. This is made from a dry goods box because of the greater economy of cost. Two colonies occupy the same hive stand the year around. Dry leaves are used for packing. This cheap case is described fully in *Productive Beekeeping*.

THE HOSHAL WINTER CASE.

Mr. A. E. Hoshal of Beamsville, Ontario has a winter case unlike anything else which the writer has seen. This is a single colony case and he uses both metal cases and wood. Soaring prices caused by the war makes the metal prohibitive just now but the cases which he made before the advance in price were very reasonable in cost. Mr. Hoshal uses the Heddon divisible hive and gets good results.

The three pictures show how the cases are packed and unpacked with the same material year after year. He uses planer shavings and after the colony is unpacked in spring replaces the packing material in the case and piles them up against the outbuilding as can be seen in the photo.

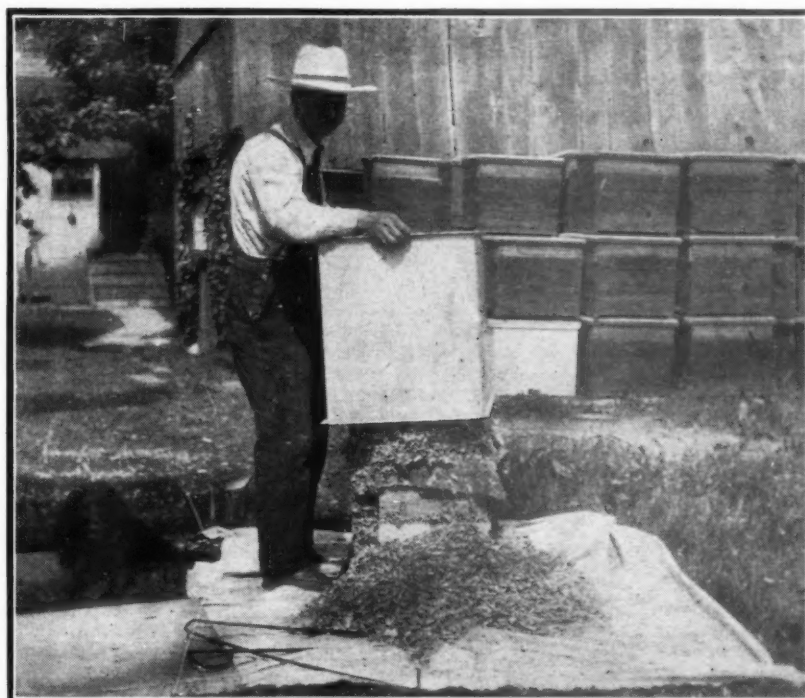
These cases are very light when made of galvanized iron and if a good quality of material is used will last for many years. Mr. Hoshal is an extensive producer and has everything arranged so that he can pack

or unpack his colonies in a minimum of time. The first picture shows the light lifting irons by means of which he lifts the case onto the sheet which is to catch the packing material. The next one shows the case on the sheet ready to be unpacked. The third picture shows how easy the case is removed and the fourth shows the empty case behind the hive and the material on the sheet. The packing

is now dumped into the empty case, the cover replaced and the case added to the growing pile. When time comes to prepare the colony for winter it is an equally simple operation. The packing is dumped onto the sheet and the case placed over the hive, when the packing is again dumped into the case and carefully packed about the hive, the covers are placed and all is snug for winter. For pack-



MR. HOSHAL READY TO REMOVE THE PACKING FROM HIS METAL WINTER CASE



THE HIVE IS LIFTED UP AND THE PACKING FALLS OUT ON THE SHEET

ing a colony with the minimum of labor the Hoshal is the simplest the writer has yet seen.

The Yellow Peril

BY CHARLES DUFF STUART.

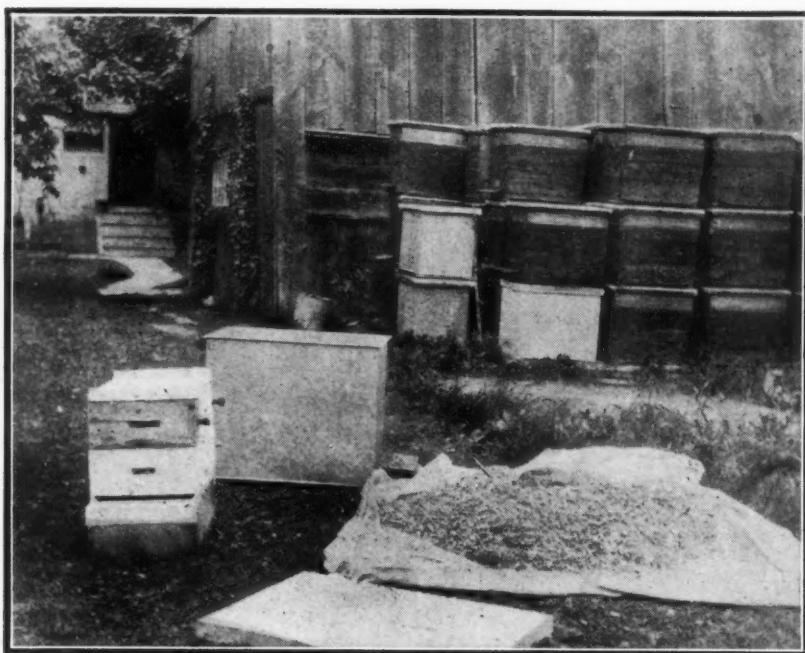
(Illustrations by John R. Douglas.)

We in common with neighboring beekeepers are suffering from a visitation of yellow jackets. The plague descended upon us about July 1st. We traced them to their nest which hung like a Chinese lantern under the eaves of our house, and destroyed it utterly, by dislodging and dropping it in a bucket of scalding water held just beneath. The interior of the nest was full of young larvae, ranged symmetrically in cells not unlike the cocoon of the honey-bee cell, after the wax is melted away.

But this wholesale slaughter only temporarily checked the enemy. They reformed their lines, so to speak, called out the reserves and came upon us again.

At first they seemed satisfied to carry away the dead bees lying on the ground in front of the hives, but as their numbers increased they grew bolder and attacked live bees on the landing boards and even entered the

American Bee Journal



THE HIVE, EMPTY PACKING CASE, AND PACKING MATERIAL FROM THE HOSHAL WINTER CASE

hives themselves. Full colonies seem to be able to defend themselves, by the very superiority of numbers. One beekeeper in observing the relative strength of the opposing forces estimates that six bees are required to vanquish one yellowjacket.

That ratio is probably due to the armor-like quality of the enemy's yellow jacket which apparently is invulnerable to the sting of the bee. On the other hand, the yellow jacket finds it a simple matter to seize a bee, sever it with a sawing motion, and fly away

with the meaty portion which also contains the honey-sac, leaving the head and front legs of his victim wandering aimlessly over the frames.

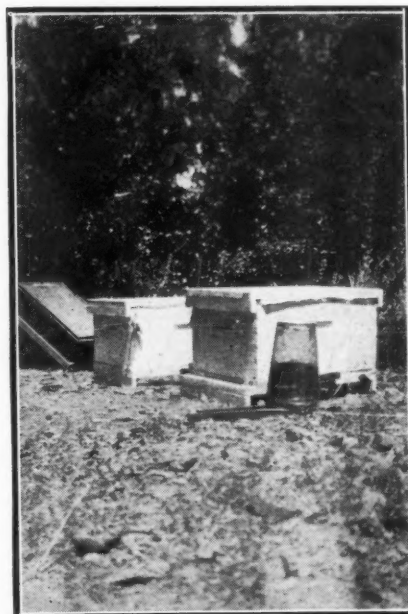
But in a full hive the bees often ball the invaders as they do a queen; then other yellow jackets hurl themselves upon the "ball" until the front of the hive presents a veritable battlefield.

It is the weaker colonies and the nuclei for mating queens that suffer most. It is a rare occurrence to open one of these and not find the inmates battling for their very lives. And

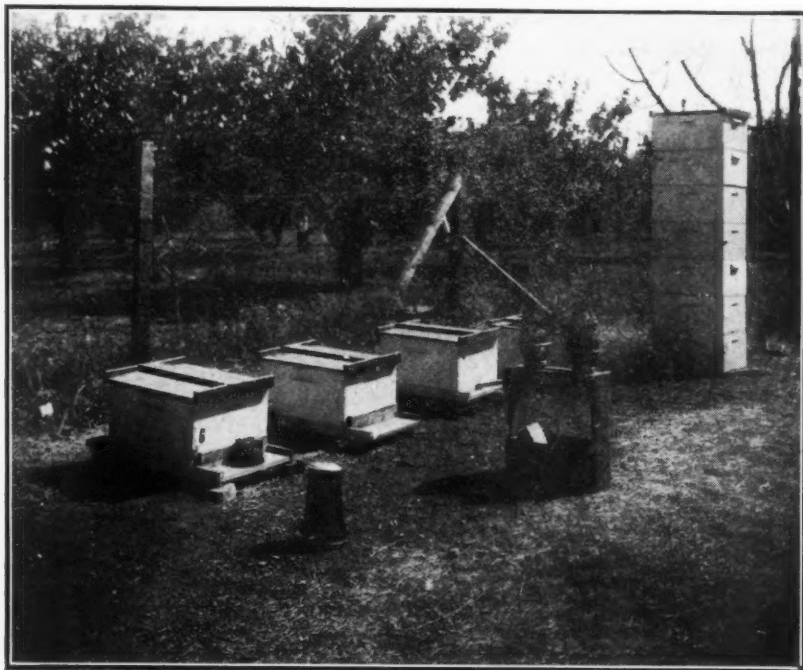
there is no doubt that this condition has been the prime cause of the small percentage of matings of virgin queens. Out of twenty-four virgins 23 were lost in a single week.

A resourceful member of the Bee Club suggested the use of an ordinary fly trap baited with raw meat, and already one member has six in operation, another three and another 2, which are filled with yellow jackets and emptied once and sometimes twice each day. We have just been obliged to add two more to the number already in our apiary adequately to cope with the situation.

Mr. McCullough's \$1.50 fly trap—for years the family joke because it had never been known to catch a single fly—is being emptied of yellow-jackets twice in a single day. The



NO. 2.—PROTECTING A QUEEN-MATING NUCLEUS



NO. 1.—CLEANED OUT BY THE YELLOW JACKETS

trap is eighteen inches tall and holds about three quarts when full.

But it required a doctor scientifically to strike at the root of the evil (the breeding-nest) by enforcing a species of birth control. This method provides for a generous saturation with arsenate of lead of each piece of meat (preferably salmon) carried home to the young by the yellow jackets. The sudden decease of a neighbor's dog that had eaten too freely of the dead yellow jackets lying about, proves the efficacy of the treatment. But the best proof was the depleted condition of a captured nest. Scarcely a yellow jacket remained. Dr. Douglass also made another discovery which explains the numerous progeny of these pests. In one nest four "Queen" yellow jackets were found, instead of a single queen bee as in the honey-bee brood-nest.

Mr. M. C. Richter states that in England, especially in and around London, the yellow-jacket-pest is prevalent and is the most annoying enemy with which the apiarist has to

contend.

Illustration No. 1, shows a stack of hives that once contained flourishing nuclei. Of the four hives still remaining on the ground only one now contains bees, the others having been cleaned out by yellow jackets. In No. 2, a trap has been stationed near a nucleus containing a virgin queen, in the hopes that the bait will lure the enemy away from the entrance, at least long enough to give the queen an opportunity to take her nuptial flight unmolested.

In one of our colonies which had become weakened owing to the presence of a drone-laying queen, the harassed bees, together with a fine new queen, deserted brood and stores to escape the pests. In twenty four hours devastation was complete. Not only were the stores carried away by robber-bees, but the brood was torn from the cells by the yellow jackets

and the floor of the hive reminded one of confetti-strewn streets on New Year's Eve, so thickly was it covered with particles of cell-cappings.

We are rendering the bees all the assistance possible, for it looks as if we are fighting a very real yellow (jacket) peril.

A Box Swarm Catcher

Most beekeepers still prefer to catch swarms by using a ladder, saw etc., and by cutting down the branch to which the bees are suspended. A large number also use the swarm catchers advertised so generally. Messrs Roberts and Hartwick, two Illinois beekeepers did not like the ordinary swarm catcher, nor did they like the exertion connected with "shinning up trees".

They have devised a swarm box (see illustration) which by means of a pole is inserted against the swarm cluster. The box is made hollow and long. They assert that the swarm will immediately take advantage of this improvised "hollow tree" and cluster in and about it, when they can be lowered and shaken in front of a beehive.

A Novel Feeder

For years past there have been feeders and feeders, but it has remained for W. A. Chrysler, of Chatham, Ontario to make one which combines the good features of most of the others. There are feeders which will take enough feed at one time to provide for winter, but the hive must be opened in order to replenish them, which is bad when there is a dearth and robbers are about. There are others, like the Alexander feeder which can be replenished without opening the hive but most of them hold but a small quantity of syrup since they are designed for stimulative feeding. Mr. Chrysler's feeder will hold a liberal amount of feed if it is desired to make a quick job of it or a small quantity can be fed each day as circumstances indicate. As will be seen at a glance in the picture on the opposite page, the



THE ROBERTS & HARTWICK SWARM CATCHER IN USE

feeder is made by means of a deep double bottom with a partition across to divide it into two separate compartments. One is left wide open to serve as an entrance to the hive and a drawer just right to fill the other is made to hold feed. The lower

photo shows the two slots in the bottom board. One slot opens into the feed chamber and the other into the open entrance. This combined feeder and bottom can be left in place the year around and when feeding becomes necessary for any reason it takes but



W. A. CHRYSLER AND HIS BOTTOM FEEDER SHOWING SLOTS, ONE TO FEED AND THE OTHER TO ENTRANCE

American Bee Journal

a moment to supply it.

There are fewer advocates of stimulative feeding every year. More and more practical beekeepers are coming to believe that with a sufficient quantity of stores in the hive, the bees can be depended upon to expand the brood nest as fast as is desirable. However,

The honey from this source is so very bitter that a very little of it will spoil a fine crop of the best white honey. A few cells are sufficient to make a whole section absolutely unpalatable.

On a recent visit to Tennessee I was very much interested in this plant which grows freely along road-

sides, in barnyards and similar places, much as dogfennel or mayweed does in the northern states. The range of the plant is given as from Arkansas and Texas to North Carolina. It probably does not appear to any extent north of Tennessee.

Chas Mohr says of it: (Plant Life of Alabama page 54) "The bitterweed, originally from the sunny plains west of the Mississippi river south of the Arkansas valley, was first observed in Mobile in 1866. It has spread along the embankments of the railroads to the mouth of the Ohio river, literally covering in many places the waste and uncultivated grounds, and reaching out along byroads and borders of fields and woodlands. In its northward spread it has largely taken the place of the mayweed (*Anemisis cotula*), a European weed of early introduction."

Regarding honey from this source J. J. Wilder says: (Am. Bee Journal Vol. 54 page 410) "It is truly a nectar-laden plant. Though it does not grow in great fields as yet, bees will store from 20 to 35 pounds of surplus per colony from it. Its flowers are of a deep yellow; the honey, light yellow, heavy body, soon granulates when extracted. It is very bitter; in fact it is about as offensive to the palate as quinine. In most sections of the south the cotton plant begins yielding two or three weeks before the bitterweed and if it were not for the well established fact that bees do not desert a honey plant for another as long as it yields well, nearly all the summer and fall honey would be unfit for market on account of the bit-



CHRYSLER'S BOTTOM FEEDER IN PLACE, WITH FEED DRAWER OPEN.

there are times when it is necessary to practice this method of feeding to build up the nuclei or to maintain normal conditions in queen rearing aparies. Every well regulated apiary requires some attention in the way of food for winter supply or to avoid shortage at other seasons. The Chrysler feeder is convenient and serviceable although the cost is rather high. However, when it is remembered that it serves for both bottom and feeder this objection is not important.

No. 21.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

THE BITTERWEED—*Helenium Tenuifolium*

My first experience with bitterweed honey was in South Missouri in 1904 or 1905. There had been a good flow from white clover followed by a dearth for a time and the unfinished sections were filled out with bitterweed. The sections looked very nice and a northern beekeeper who had recently settled near the town of Salem innocently sold his honey to the townspeople. The next time he came to town there were numerous persons looking for him and he found it necessary to take back most of the honey he had marketed on his previous visit.

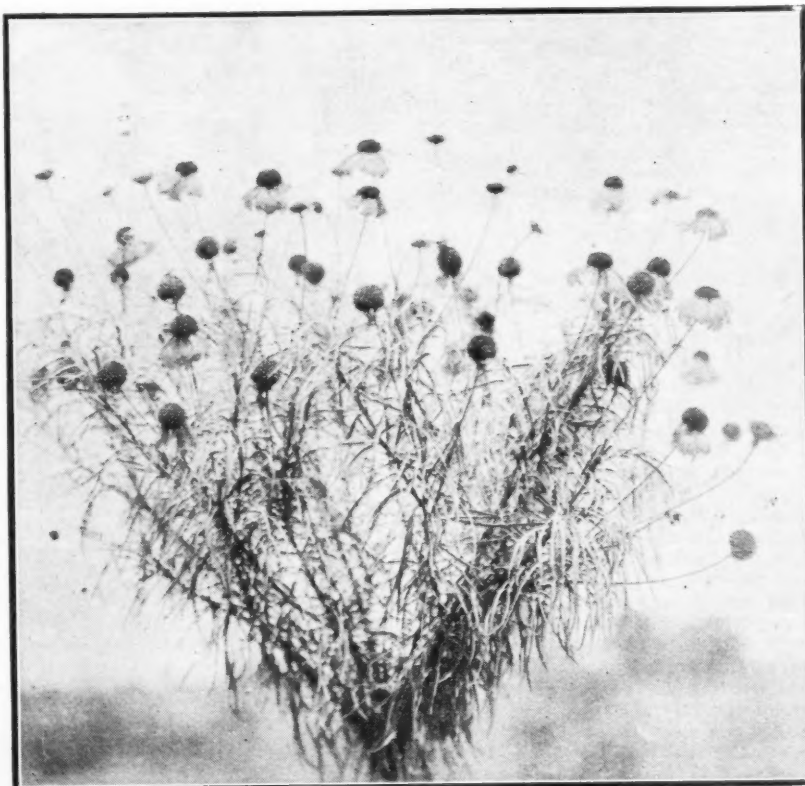


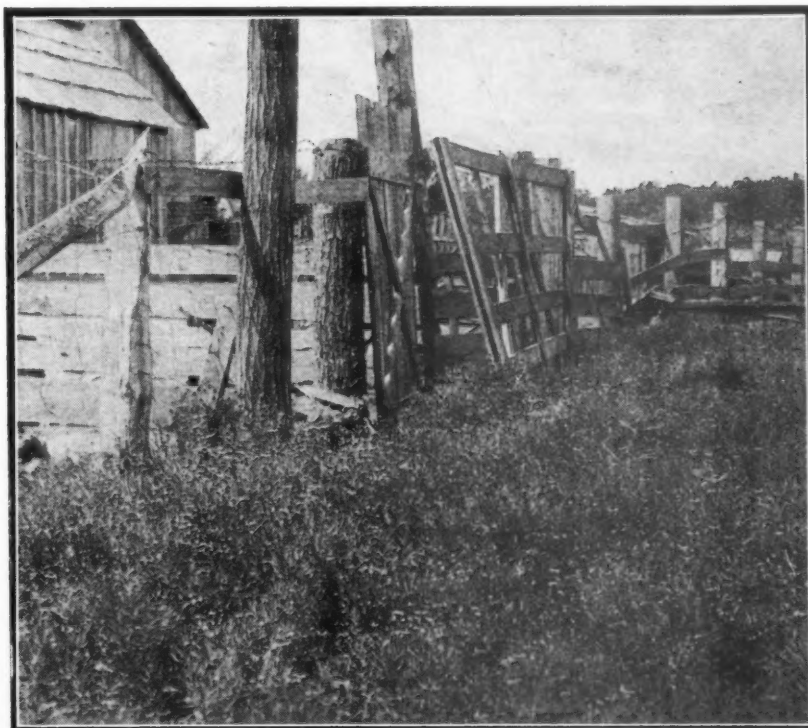
FIG. 88.—A SINGLE STALK OF BITTERWEED

terweed. In sections where the cotton does not yield much, the honey is all bitter and a small amount of it will ruin a tank of good honey. Bitterweed is also a great pollen plant, furnishing abundance of bright yellow pollen throughout its blooming period. Even the stems and foliage of this plant are intensely bitter and no animals eat it."

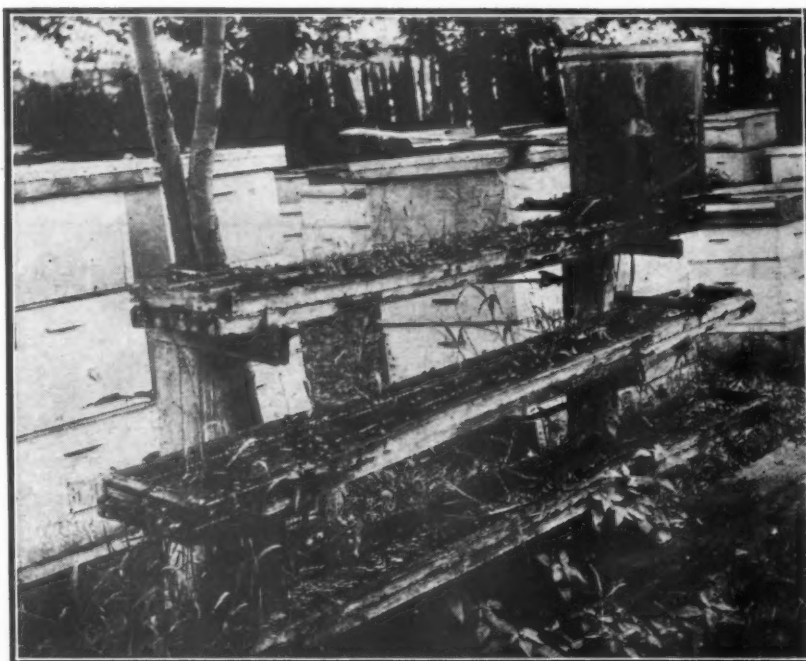
Doctor Pammel in his book on "Poisonous Plants" cites a quotation which states that it has been reported as fatal to horses and mules in sev-



FIG. 89.—BITTERWEED BLOSSOMS



BITTERWEED IN A TENNESSEE BARNYARD



WATERING DEVICE IN THE J. M. DAVIS APIARY

eral of the gulf states. It is said to contain a narcotic poison and to be the cause of bitter milk.

A relative of this plant, the northern sneezeweed, *Helenium autumnale* is also a good honey plant and probably less bitter than the southern or narrow-leaved sneezeweed just described. Neither, however, can be said to be desirable additions to the honey producing flora because of the danger of spoiling good honey from mixing

with it. The northern sneezeweed is found in various localities from Connecticut to the Dakotas and southward. It is also found in places in the Rocky Mountain states.

The bitter honey seems to be as good as any for brood-rearing and where present the beekeeper should use care to avoid mixing it with his marketable product and use it for feeding the bees. The bitterness is said to come from the pollen grains present in the honey and to improve greatly with age as the pollen grains settle to the bottom of the container.

Atlantic, Iowa.

Copyright: 1916, by Frank C. Pellett.

A Unique Watering Device

TOO little attention is paid to the water supply in the apiary. Many a beekeeper has found his neighbors hostile because of annoyance of bees about rain barrels, watering troughs, open wells etc. If a sufficient supply of water is available near the hives the bees will seldom be troublesome elsewhere. It must be constant, however and should be available from early spring until freezing weather in fall. Otherwise the bees are quite likely to seek a supply elsewhere and once having found it, to continue to frequent the same source. There are numerous plans for providing water for the bees without danger of drowning. The one shown in the picture requires frequent filling but there is little danger to the bees and the supply is sufficient for thousands of bees to drink at once. The picture was taken in the apiary of Mr. J. M. Davis, of Spring Hill, Tennessee, at the time of the visit of our staff correspondent. As will be seen there are three very shallow troughs, one immediately underneath the other. The large can at

American Bee Journal

one end of the upper trough has a small outlet which lets the water drip out slowly. There is an overflow from the upper trough into the one below and from that to the lower one so that there is water in all three troughs at all times. As can be plainly seen in the picture, grass is growing in each one of the three shallow receptacles. This watering place has been in use in the Davis apiaries for many years and is all moss grown. Although Mr. Davis has a large open well a short distance away and the usual bucket and troughs the bees were not noticed about the well. An abundant supply in the immediate vicinity of the hives meets their needs and saves them the necessity of longer flights in search of it. With a regular supply in the apiary the beekeeper will find less annoyance to himself and to his neighbors and at the same time will save countless bees from drowning as is the case where no such provision is made. Whenever brood rearing is in progress the bees require large quantities of water.

Frame Wiring and Wire Imbedding

The best beekeepers and probably a majority of all keepers of bees use full sheets of foundation in new brood frames, and all such frames, are wired to prevent sagging in the foundation, with resultant

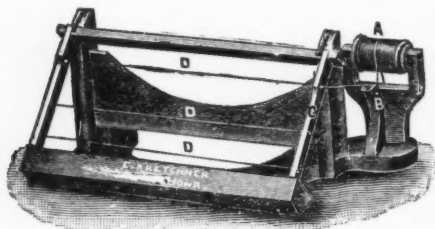


FIG. 1.—A FRAME WIRING DEVICE

drone comb caused by stretched cells. Probably a majority of these beekeepers still do all wiring of frames by hand. For anyone having much wiring to do it is well worth the expense to get or pattern after a form for such wiring. Fig. 1 shows a

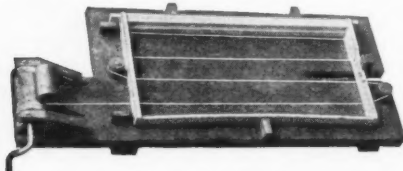


FIG. 2.—ANOTHER WIRING DEVICE

wiring device. Fig. 2 is a similar device arranged with rollers so as to make the work of wiring a small job comparatively.

The spur imbedder for fixing the wires to the foundation has for years been in common use. It is however, far surpassed by electrical wire imbedders which not only imbed the wires but melt the wax over them,

and in this way fix such wires permanently. This is especially important where it maybe desired to haul frames with full sheets to out apiaries or to ship them if necessary.

When the beekeeper is in reach of a good electric current an electric imbedder as in Fig. 3 may be arranged.

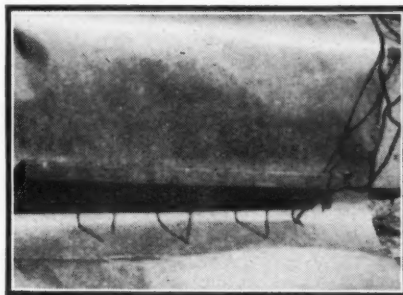


FIG. 4.—TWO DRY CELLS ARE SUFFICIENT WITH THIS WIRE IMBEDDING DEVICE

It consists of a rheostat for regulating the current, connecting wires and a form on which the foundation and wired frame is held. By means of small protruding tacks in the side bars to which the ends of foundation wires are attached the current is applied to the four wires at one opera-

tion.

Fig. 4, the invention of an Indiana beekeeper is much more practical in that it takes only two dry cells to produce the current. Instead of all four wires being fixed at one time, the five copper prongs come in contact with each wire, thus shortening the circuit. It is remarkable what thorough and effective work, this home made imbedder will do, and with what ease it is done.

A New Hive Cart

Many of our readers, especially among the ladies find it difficult to handle the heavy supers when the apiaries are run for extracted honey. With a power-driven extractor the work of honey production is not too laborious for anyone if the supers could be carried in by machinery. Mr. Frank C. Pellett has a hive cart in use in his apiary which is higher than the top of the second story of the hive. The past summer most of his colonies were four and five stories high, all full depth Langstroth supers. With the cart shown in the photo it is not a heavy lift to slip the supers onto the cart when ready for removal or for the purpose of examination. If it is necessary to get to the bottom of such a hive when it is

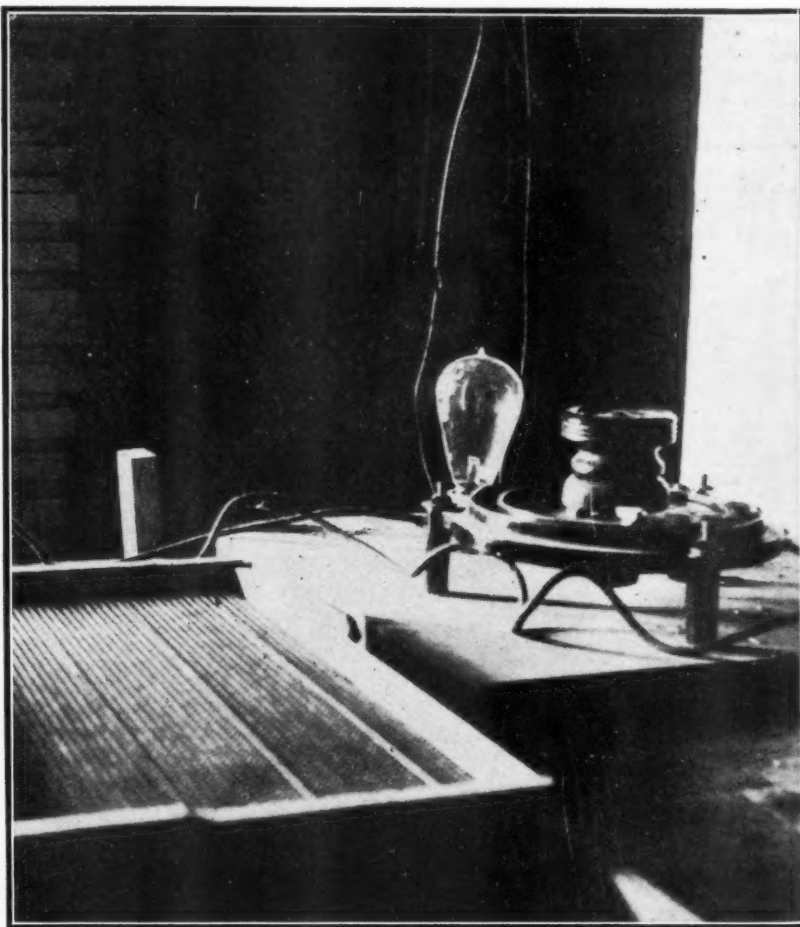


FIG. 3.—WHERE CURRENT IS AVAILABLE A RHEOSTAT ENABLES ALL FOUR WIRES TO BE IMBEDDED AT ONE OPERATION

American Bee Journal

nearly full, it is a heavy job to lift all the supers to the ground and later replace them again. One picture shows the cart with the derrick laid down when the cart is used as an ordinary hive cart. In the second picture the derrick is raised so that by means of a crank the upper super can be lifted clear of the hive and allowed to hang while the next super is examined. If more than one super is to be removed for examination such as are necessary are slipped onto the floor of the cart while those below are removed. The derrick works easily and the clamp which holds on the principle of the ice tongs holds a full or empty super with safety.

While the work of removal and replacing the supers by this means is somewhat slower than when the operation is performed by mere physical labor, it is possible to handle the heaviest colonies with little strain on the operator. A frail woman or a boy can readily exert sufficient force to remove a full super, swing it into the cart, lift the next one into the air and examine the one beneath when necessary.

As will be seen in the illustration the wheels are well under the back of the cart, thus furnishing a substantial support for the derrick when in use. The derrick is supported so that the hive swings just clear of the back of the cart in lifting but yet will readily swing over when desired to place it on the cart. A single hive can readily be lifted from the ground or the top super of a five story hive can easily be removed.

The floor of the cart is just right for six ten frame supers so that twelve empties can be hauled at one time. Four or five full supers make a pretty good load since it is difficult to push a heavier load over uneven

ground.

We believe that those of our readers who think the full supers too heavy for them, will find a cart of this kind of much assistance.

A West India Ramble

BY W. J. YOUNG.

Although the American Bee Journal is published for the interests of the American beekeeper, a few words descriptive of conditions as they exist in the West Indies and other tropical countries will probably interest the reader who is located in the U. S.

For twelve years in Porto Rico the writer was engaged in the production of honey, and where have the twelve years gone?

I landed there in 1904 and started out with a very poor idea as to future prospects. Could see no one from whom to ask advice as no one was making the production of honey a business.

I located at first near the south coast close to Ponce, where the bees do not do much. From there I moved to the interior where the bees breed up and bring in honey with wonderful rapidity. The only visible source of honey is wild forest growth. The country when in virgin forest must have been a beekeeper's paradise.

For eight years my annual average crop was thirty thousand pounds, from not over 150 hives. I thought it was a permanent thing but was doomed to disappointment.

In 1913 the natives got the bee fever and tumbled over themselves to get into it. The country became overstocked. I had a chance to sell out which I did. Better to say lost out.

I had been run out of business the same way, in Cuba, before locating in P. R.

I had built a good house and did not like leaving it, but it would have been up-hill work to have stayed, with over 800 hives of bees within short range.

Not only was tropical apiculture a pleasant occupation, but the salubrious climate, beautiful mountain scenery green with vegetation and the mountain streams, always running with pure clear water, were attractions not soon to be forgotten.

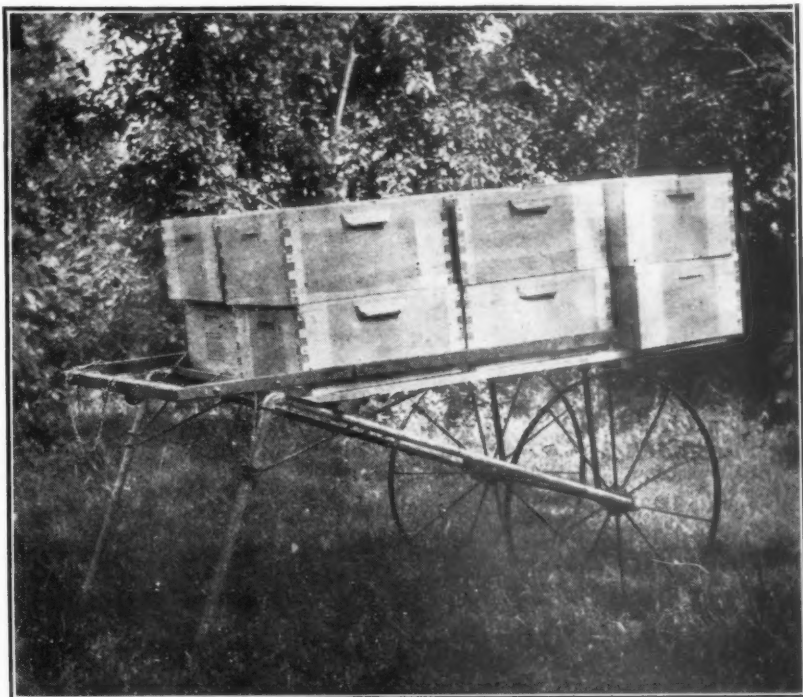
Then there was the ocean only ten miles distant and accessible by a good road. A bath in the sea is nice, but better still a fresh water stream in which the bather can soap off and rinse off with the water and atmosphere at just about the right temperature. The extensively advertised porcelain tubs with a complete system of plumbing are a luxury, but for me the mountain stream is far more luxurious.

The reader may think that cracking up Porto Rico like this is a real-estate boost, but it is nothing of the kind. There are advantages besides climate, scenery, and good water, that do not exist in P. R. For English-speaking people who want to live where are the ordinary necessities of life, any Latin country, even if it is under the American flag, is a good place to keep away from.

But this is not talking bees, or West India ramble. I took the train at Arecibo which is in the north coast, and traveled a distance of fifty miles to Mayaguez, there to take the steamer for Cuba. In many places the railroad is as near to the ocean as is the Southern Pacific in the vicinity of Santa Barbara, California, and lots of beautiful scenery, this time mountain and ocean. It is on the north-west corner of the island that the mountains are close to the sea, and building the road through this section was a difficult and expensive piece of work. In places the tracks are that near the sea that they have to be protected by a concrete wall, and then the road climbs up until the ocean is several hundred feet below. There are two tunnels one of which is at least a fourth of a mile in length.

The country in the vicinity of Mayaguez is overstocked with bees to a greater extent than anywhere else on the island. Healy & Seibert at this place are doing an extensive business in buying honey and selling bee supplies.

On Dec. 6th I took the steamer for Santiago, Cuba, and for unpleasantness it was an experience long to be remembered. Anyone who is unaccustomed to sea travel would think that out on the ocean the atmosphere would be cooler, and the air fresher, but in the tropics the reverse is the case, unless out on deck and on the windward side of the ship. When in the cabin or outside when there is no breeze blowing, the heat, bad air and disagreeable smells are more the cause of sea sickness than the motion of the boat. The ship was an old Spanish tub on which the first class fare was far inferior to second class



THE PELLETT HIVE-CART WITH LOAD OF EMPTY SUPERS

American Bee Journal

accommodation on any American or English vessel.

The trip was not as unpleasant as it would have been if in mid ocean. Passing the island of San Domingo the boat kept close to the south shore, and steamed the entire distance by daylight, laying over night at San Domingo City. On the western end of the island the country is level, with mountains in the distance, but after passing S. D. City the mountains are close to the ocean and in places are so high as to pierce the clouds, and everywhere is a dense growth of tropical forest. The land that has been cleared for cultivation is less than 2½% of the entire area.

If ever there was a tropical paradise it is the island of San Domingo, not only for bees, but for all other kinds of tropical farming that is if the country had a good government, but under present conditions it is no place for civilized people.

San Domingo City is an old time place, said to be the first on the western hemisphere to have been colonized. There are a few attractions for which the place is deserving of credit. The city is situated at the mouth of a river and gets the full benefit of the ocean winds. There are plenty of shade trees, which with the original forest growth make the atmosphere cooler than it would be if everything was cleared off.

In the center of the city is a good sized plaza which is equal in beauty to Boston Common, or the Alameda in Mexico City. On the sea front is another beautiful park, the side facing the sea having been terraced, which sets off the entire city, giving it the look of a seaside pleasure resort.

The streets are wider, and the buildings more scattered than in other Spanish-American towns. The ruins of the cathedral that was built by a brother of Christopher Columbus still stands. On board the ship the cabin was so hot that I had been sleeping on deck, but the night that she lay in San Domingo harbor the temperature was cool enough, so that it was possible to sleep in the state room.

I would have liked to have met some of the bee and honey men, but the ship did not tie up to the dock until a little before closing time, and pulled out the first thing in the morning. In one warehouse on the dock I counted over 200 barrels of honey, and on board of the Clyde steamer, *Algonquin*, bound for New York, were 145 barrels of honey.

It was on this steamer that in 1895 I had been twice a passenger between Jacksonville and New York. At that time the *Algonquin* was the finest ship of the Clyde Line, and she is still a magnificent boat with well ventilated cabins, roomy state rooms and accommodations that are in every way superior. I lost no time in getting on board and visiting a scene of twenty years ago. None of the crew that had been employed on the ship at that time were there, but I had a pleasant visit with one of the officers.

Another two nights and a day of unpleasantness on the Cuban ship and we landed at Santiago, Cuba. Although

it was mid-winter the weather was hot. As Spanish-American cities are usually built it seems that they try to make everything as hot and unpleasant as possible. The streets are narrow and the houses close together. There are two small parks in the center of the city with no shade trees to speak of. There are several modern hotels, and the city is the eastern terminus of the Cuban Central Railroad.

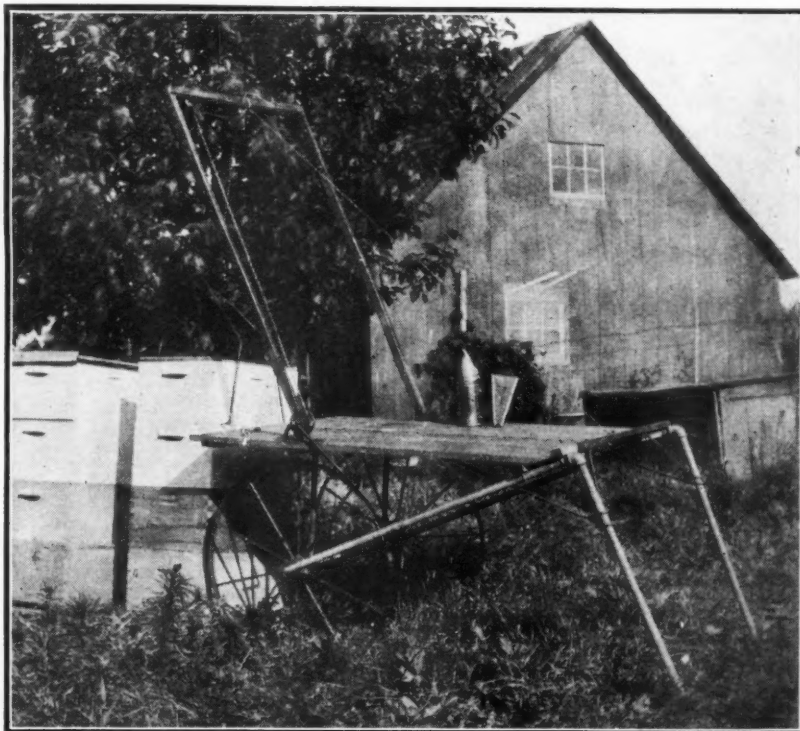
I took the train for Havana. A few words as to the railway and its equipment. The tracks are standard gauge and there were at least ten full size passenger cars on the train. Got a second class ticket, which costs three cents a mile. First class fare costs six cents a mile.

The second class cars were not over-crowded and no pigs or chickens

After crossing the divide which is only a few miles from Santiago, and getting on the northern slope, the temperature is several degrees cooler. The first fifty miles of the route was through settled country which was white with agualdo, the famous honey flower of Cuba.

What a treat it would have been to have stopped off for a visit with Mr. D. W. Millar who is located at Holguin, in Santiago Province, but it would have been necessary to take a different route and to make a side trip from the main line. Brother Millar has written several interesting articles for the *Journal* and a good writer is usually a good entertainer.

For about two thirds of the distance from Santiago to Havana the country is dense virgin forest, much like San Domingo, although more land has been



PELLETT HIVE-CART WITH DERRICK RAISED TO LIFT FULL SUPERS OF HONEY FROM THE HIVES

(about which more will later be said) were allowed as hand baggage. The accommodation was fairly comfortable except for the fact that there were no cuspidors and, it seems, no rules against expectorating.

For the tourist who wants to pay six cents a mile, the Cuban Central compares favorably with any first class road in the U. S. or elsewhere. There were two sleepers on the train, and meals and lunch counters at the more important stations. The train was on time and there was close connection with trains on the branch lines.

The run to Havana could have been made in twenty-five hours but wanting to see what there is to see and travel the entire distance by daylight I stopped over night at Ciego de Avila.

cleared and is in cultivation. The land is level or slightly rolling and sometimes mountains may be seen in the distance. After passing Santa Clara, and from there to beyond Pinar del Rio the country is much more open der cultivation

The dense forest growth would be much more of a bee keeper's paradise if there was plenty of agualdo as there is on land that has been under cultivation.

It looks queer that the eastern part of the island where the soil is better than in the western portion, should be more thinly settled, but the land is probably held in big tracts by owners who refuse to sell, which is usually the case in Spanish countries.

I arrived in Havana a little after dark, and as the reader has probably

American Bee Journal

heard lots about that city which has been so extensively advertised I will say nothing except that I never did and never would like that place. I must wait ten days for a steamer to Nassau, and did not feel like spending that much time in Havana.

So I took the train for Candelaria, fifty miles to the west and near where I had lived in 1902 and 1903.

People who visit the old home after an absence of several years are usually disappointed. In this case there was the usual disappointment as not many of the old timers were left. Most of them had returned to the States, and several had crossed the Great Divide.

But there was an agreeable surprise in meeting four of the old friends. They were: Mrs. Unruh, Mr. Moe, Mr. Muhl, and Mr. Somerford.

Mrs. Unruh had bought a farm of thirty-three acres at least a half mile from town, but during the twelve years that she has owned the place the town has grown to such an extent

on the side. He has a nice home and everything neat and in good order. The shady front yard that is planted in Bermuda grass and kept clean with rake and lawn mower would be an example for many home lovers to follow. The little frame shack that I had built was still there and had been through two cyclones.

It was at Taco-Taco that the late John H. Martin better known as "Rambler" took his last stand and made good, after several years of failure in California. It was early in the spring of 1902 that Mr. M. arrived in Cuba and built up a big apiary, and got a good crop of honey. For a year he wrote interesting articles for each number of *Gleanings in Bee Culture*. In May 1903 he died, it was said from over work.

That visit to the old home was an experience not soon to be forgotten. The honey season was on and for the first time in twelve years I had enough to eat of the delicious aguin-aldo honey.

Line and I landed at Nassau, capital, main sea port and commercial metropolis of the Bahama Islands.

It has always looked a little curious that so little is known and said of the Bahamas as near as they are to Florida, Cuba and San Domingo. Some of the smaller islands are not over 50 miles from Florida, and the capital is not over 200 miles from Miami. We hear more about Guam and St. Helena which are small and insignificant islands and are thousands of miles from nowhere.

The Bahama Group consists of 29 islands and 661 keys or smaller islets. They extend between latitude 21 and 27, and longitude 71 and 79. The area of the group is 6,000 square miles and population 55 to 60 thousand. If the population is 60,000 that means a density of ten to the square mile. Something different from Porto Rico with 3,500 square miles and 1,300,000 population.

The Bahamas are owned by Great Britain and are governed pretty much the same as other English colonies on this side of the Atlantic.

It is the popular impression that the islands are a lot of wind-swept rocks, out in the ocean, with sponge fishing and wrecking as the only industries.

The wind and rocks are there and lots of both. There is a delightful climate except for the wind, and plenty of tropical vegetation although it does not grow as luxuriantly as in the West Indies.

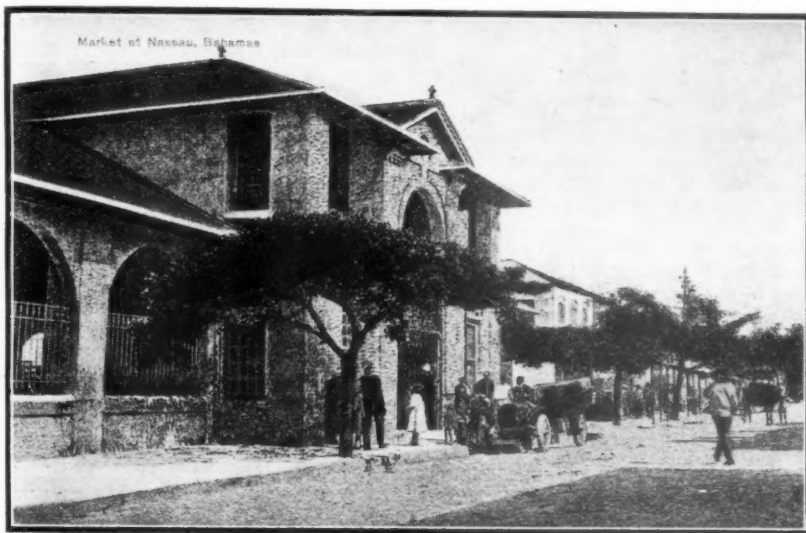
The land is mostly soft rock and the little there is of soil is decayed vegetable mold. In many places close to the sea are strips of sand which is good land for cocoanuts. There is lots of swamp land in which grows the mangrove, a well known honey plant of Florida. Most of the land of New Providence, the island on which the capital is situated, is a pine barren, although there are considerable areas of hard wood near the sea shore.

The principal growth on the islands of Andros, Abaco and Great Bahama is pine trees and the islands further to the east are grown in hard woods. The cocoanuts grow as tall as in the West Indies. There is lots of aguinaldo, which is here called the Christmas flower. It grows as in Cuba on land that has been cultivated. On some of the abandoned sisal plantations are patches that are white with the bloom.

Oranges and grape fruit do well, that is if the hole in the rock in which to plant the tree has been blasted out with dynamite and dug deep enough. The soil, the little there is of it, is rich and does not require fertilizer.

There was a time when pineapple growing was a great industry, but it was killed by the U. S. tariff. Tomatoes are grown in immense quantities. It is nothing unusual for 10 to 20 thousand crates to go to New York on one steamer. And such luscious and juicy tomatoes! On the island of Eluthera they were to be had for the picking. What a paradise for the epicure who never before had enough ripe tomatoes.

There are no mountains and the



A VILLAGE SCENE IN BAHAMA

that the property now adjoins the city limits and she has a good speculation.

Mr. Muhl is still in the bee business. He is located on the south coast in a south-east direction from town, where the country is white with aguinaldo.

Mr. Somerford is also located near the south coast, in a south-west direction from Candelaria, and is in a good aguinaldo district.

Mr. Moe still has his apiaries a short distance in the country, but is residing in Havana where he is engaged in the fruit business.

Although Candelaria is a fair sized town claiming at least 3,000 population there is no hotel that is worthy of the name. I was taken care of by Mrs. Unruh and her sister M. s. Travis, and never expect again to have such a pleasant visit.

Six miles to the west of Candelaria is San Cristobal, and six miles further is Taco-Taco. It was between these two places that I was located. Mr. Webster is now living on the old place and is growing fruit, with bees

Time goes by at aeroplane speed and it was nearly time to take the ship to Nassau. Coming out from Havana on a second class ticket (98% of the people travel that way) most of the passengers were neat appearing, but what a difference going back! the train was crowded with what appeared to be farm laborers and standing room was at a premium. Nearly every passenger had from one to three live chickens, and there were several pigs and dogs in the car.

This road which runs from Havana to beyond Pinar del Rio is known as the Western Railway of Havana, and is under English ownership and management. First class passengers are allowed to carry as hand baggage, one live chicken, and in the second cars three chickens or one pig may be taken. If live stock is carried in the baggage car, excess charges have to be paid. Two and a half hours of misery and the train pulls into Havana.

Twenty-four hours aboard of the floating palace "Mexico" of the Ward

American Bee Journal

highest elevations above sea level more experience will probably make a success of the business.

There is also a lady, Miss French, who for several years has been keeping bees in a small way, depending on them for a living. She is located in the suburbs of Nassau.

Sponging is the leading industry, and is a good business for the buyers and exporters who have been long established, but from the looks of a sponge-fishing boat and its crew it is not an occupation that would lead to easy street.

Lumbering has begun as an industry. On Abaco Island some 60 miles to the north of Nassau, is a big lumbering plant that is owned by American capital and is shipping out mil-

With 29 islands and 6,000 square miles of land, I hope that if I establish an apiary I won't run some one else out of business or get frozen out myself as I have been twice before.

Miami, Fla.

Apiary Devices

A Safe Place for the Smoker

It is not always convenient to remove the fire from the smoker when one wishes to lay it aside temporarily. However, more than one beekeeper has lost heavily from a fire set by a lighted smoker. It is convenient to have a lighted smoker within reach whenever one is at work about the apiary for so often it is desirable to take a look into a hive or two when there is little to be done. Then if the smoker is not protected mice will often gnaw holes in the bellows and ruin it. While there are numerous ways of providing for this implement, from using a large stone jar to turning a box over it outside the honey house, Mr. W. D. Campbell of Lambeth, Ontario, has as convenient a plan as any we have seen. The picture tells the story fully. Mr. Campbell has a metal box on top of a post at a convenient height in the apiary. It is always within easy reach, always safe and may be left burning with no danger, so in case one wishes to go back again for a few minutes it is not necessary to relight it. This plan is safe, convenient and inexpensive.



W. D. CAMPBELL, OF LAMBETH, ONTARIO,
AND HIS SMOKER BOX

lions of feet of pine lumber, most of which goes to Cuba.

Although there are several lines of steamers that come out from England to Mexico, Central America and the West Indies, none of them touch at Nassau and all commerce with England is by way of New York.

Last and not least of Bahamas' attractions are the people. English is the only language spoken, and the representative people are as refined and intelligent as in any English-speaking community in the world. What is known in the States as the "tough element" exists only to a limited extent.

The colored people are usually peaceable and honest. There is no "negro problem" to contend with as there is in the Southern States.

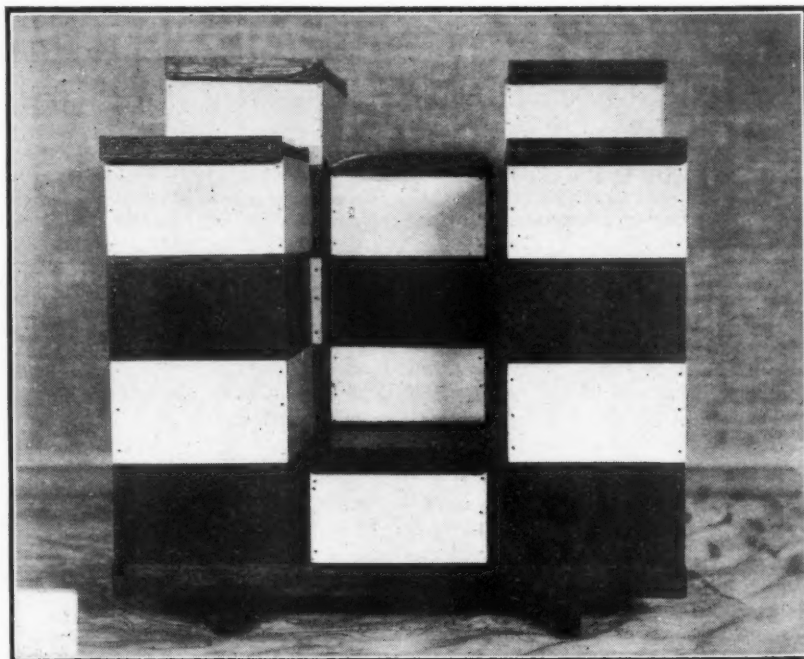
After the 12 years that I was "up against it" in Porto Rico, to get among people that I can look on as neighbors is somewhat of a relief.

There was an American, Mr. Miller, who was keeping bees on an extensive scale here, but returned to the States giving the excuse that the climate did not agree with his health. From official reports his honey crop for one year was 2,500 gallons. The apiary is now in charge of Mr. Vish, a brother-in-law of Miller, who with

An Effective Super Cleaner

When our representative visited the G. A. Deadman apiary at Merlin, Ontario, recently he became much interested in the novel plan which Mr. Deadman has for cleaning supers. When the extracting is done, the usual way is to place the supers back on the hives to be cleaned or to pile them in the open and allow the bees to rob them out. This latter is bad for the bees as they become greatly excited and often injure the combs also. When placed on the hives in the usual way there is little benefit derived from the small amount of honey still present in the combs since it is divided among so many colonies that the extra gorging which the bees do about consumes the honey. Mr. Deadman gives the supers to be cleaned to a single colony and selects one which needs feed, or one with some unfinished sections. Instead of placing the wet extracting combs directly on top of the colony he has a platform which accommodates six piles but which has only one outside opening. On this position is placed the colony which is to do the cleaning. There is an opening from the bottom of this particular one to each of the five others so that the bees can reach the combs easily, while they are safe from robbers. Since the piles of supers are at the side of this hive instead of on top, the bees will remove the honey as rapidly as possible and the combs are very shortly cleaned up. If the colony is short of stores it soon makes the most of the available supply.

Mr. Deadman has used this means of finishing sections which are not quite ready for market. As will be seen from the picture the piles of supers can be made as high as desired so that any available number



DEADMAN'S SUPER CLEANER

American Bee Journal

can be cleaned. The hive containing the colony in the picture is only one story high, while there are twenty supers of wet combs piled up for them to clean.

Hubbard Brothers' "Coaxer"

Every comb-honey producer has more or less trouble in getting the bees to enter the supers, and in some cases, bees will almost refuse to go above, preferring to swarm or to hang out and do nothing. The "Coaxer" as designed by Hubbard Brothers of Boyne Falls, Michigan, is as neat a device as we have seen for inducing a start in supers. It consists of a miniature super three inches deep holding eight frames when used on a 10-frame hive. The accompanying cut shows the bottom view.

The "Coaxer" is placed immediately above the brood frames in the early spring, and is first filled with honey. It is then removed and the super slipped between it and the brood chamber. When it is used, the sections on the edge of the super are filled just as quickly as those in the center of the super, as it seems to attract the bees.

The side view of one of the frames, shows how shallow these frames are. If the Coaxers were a little deeper the bees would be tempted to rear brood in them, but the very fact that the frames are shallow and the cells deep keeps them clear of brood, even through the heaviest breeding season. Figure 3 shows a part of a super of sections which is being finished. These sections are placed in the center of the super, and the Coaxer put over them. If there is the least flow the sections are nicely finished.

Hubbard Brothers tell us that the first Coaxer made by them was whit-

tled out of a pine board one day at an out apiary and was simply an emergency device. Besides being an excellent thing for coaxing the bees up into the super, this little device is also very good for spring feeding.



A SIDE VIEW OF ONE OF THE "COAXER" FRAMES

When bees are put in the cellar for winter the "Coaxers" are all removed and stored in the honey house. Each Coaxer contains about twelve pounds of honey which is just about what a colony needs between fruit bloom and clover or raspberry flow.

The Sectional Hive

BY W. F. GEDDES.

[Continued from September.]

BEEKEEPING with sectional hives produces better combs. In the transposing of the sections in the shallow hive, the combs are generally built out better and more uniformly attached to the wood than in the standard Langstroth. Figure 7 will illustrate this point.

It is seen that the bees have built their comb to within half an inch of the bottom-bar of the Langstroth frame while the shallow frame is attached on all sides. Comb space is thus wasted and a hiding place is provided for the queen. Lack of attachment renders a new comb liable to fall out through handling and extracting.

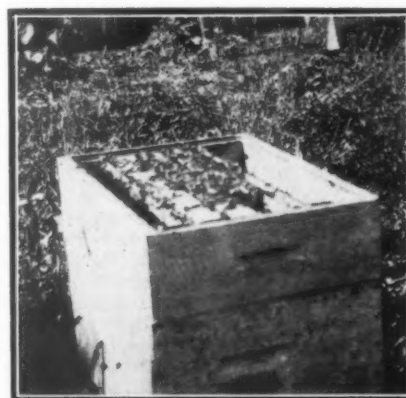
Probably the greatest advantages of the sectional hive are those which apply to the production of comb honey; and these hives, in one form or another, are used very largely by comb-honey producers. Leo. E. Gately says: "Contraction of the brood-nest is a necessary essential to insure satisfactory work in the surplus boxes, and in this respect all brood-chambers consisting of a single tier of deep frames are enormously deficient. By removing one of the sections in a horizon-

tally divisible brood-chamber the shallowness of the remaining division immediately throws the whole working force of bees into the surplus receptacle." There is no need of "baits" because the bees have formed the habit of going into the upper story to work.

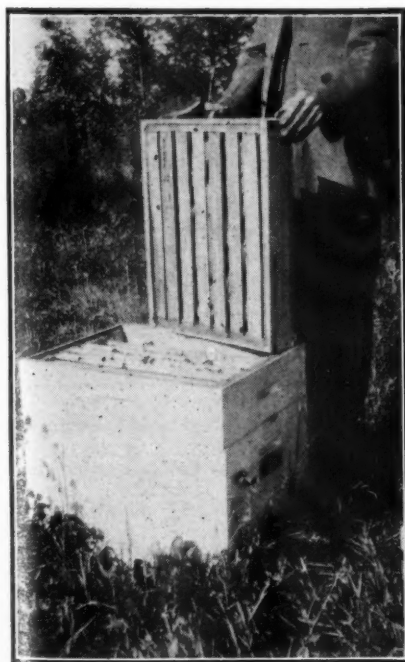
Beekeepers using the divisible hive claim that there need be no "left overs" because all partially filled sections may be converted into good salable ones by "feeding back" extracted honey. It is true that this feeding back process can be performed on a deep-frame hive, but the bees will deposit so much of the honey in the brood-nest that the practice may be unprofitable. The objection raised by other comb-honey producers that the sectional hive produced too many sections containing pollen is a valid one, but it is largely overcome by using a queen excluder and no baits, or by having a comb containing some pollen placed on one side of the brood-nest. The theory explaining the latter method is that the presence of this pollen below will induce the storage of more pollen at the same place, keeping the sections clear and for the storage of honey only.

Some beekeepers hold that the sectional hive is almost indispensable for migratory beekeeping, as it is certainly a trying experience to transport bees over the average country road. The large hives are cumbersome to handle, and there is always a fear lingering in one's mind that the big combs will break down *en route*, even when well wired.

The sectional hive may also be of particular advantage in the control of swarming. In this hive swarming is controlled by simply adding to the



SECTIONS BEING FINISHED IN CENTER OF SUPER UNDER A "COAXER"



BOTTOM VIEW OF "COAXER" SUPER

brood-chamber from above or below as the circumstances warrant. The presence of a large unfilled space so near the brood-chamber seems to effectually check the swarming impulse. W. K. Morrison in his booklet on the "Divisible Brood-Chamber Hive," states "the fundamental point in preventing swarms is to convince the bees that their brood-nest is incomplete. Just as soon as the brood-nest seems full (to them) they make preparations for swarming. If the brood-nest is complete the beekeeper makes it incomplete, and again checks the swarm-

American Bee Journal

ing fever." However, many other factors which enter into swarm control such as the age and strain of the queen, the question of hive ventilation, etc., must be considered.

The adaptability of the sectional hive for wintering is a much debated point. Many claim that this hive has proven to be poor for wintering while others strenuously insist that it is the best wintering hive ever devised. Defenders of the divisible hive claim that when one brood chamber is put on top of another, the bees can form a perfect sphere when clustering; and the space between the upper and lower set of frames makes a passage through which the cluster can move and hence be within easy reach of stores without going clear around the combs. This principle is given support by Doolittle and Danzenbaker when they advocate an opening through deep combs for winter passage.

In extracted honey-production the sectional hive beekeeper finds it possible to remove all finished honey easier than it can be removed with deep combs, as it takes longer to cap or ripen the deep ones entirely. This feature shows a particular advantage when the honey flow slackens up suddenly, as it reduces the amount of ripe honey on the hive. Of course, using shallow supers would accomplish the same purpose on the regular standard depth brood-chamber, but special super accommodation would have to be provided. The narrow combs of the sectional hive may be uncapped with one stroke of the knife. The same is true, however, of the regular Langstroth frames, where they are properly bulged and a long knife is used. However, the firm attachment of the combs in the shallow frames permits less careful handling than is required with deeper frames. Many sectional hive beekeepers state that there is no need of wiring the frames and that thinner foundation can be used. Nevertheless, it is a common practice in Ontario to wire the shallow frames even more carefully than the standard size frames because of the thinness of the top-bar.

The difficulty of finding the queen in a divisible hive may be objected to, but the queen need only be seen once in the season, generally in the spring, to note her age and see if she is clipped. The general condition of the colony will tell the experienced beekeeper how the queen is doing. An easy method of finding the queen, which is very effective, is to take a bottom-board, tack a piece of cloth or canvas on same and paint the canvas with crude carbolic acid. Substitute this bottom-board for the bottom-board of the hive in question and place a queen excluder over the brood-chamber. In about 30 seconds the queen will be found on the underside of the queen excluder, having been driven up by the carbolic fumes.

The aim of the divisible hive advocate is to cut every unnecessary manipulation, and it should not be necessary to handle frames if the proper system of management is followed. In a locality where foulbrood exists the divisible brood-chamber proposition is not one that will permit economical handling of all its frames.

The cost of the divisible hive owing

to the accuracy necessary in the construction of its various parts is an objection often put forward against its use. Especially in those types where closed-end frames are used the workmanship needs to be much more exact

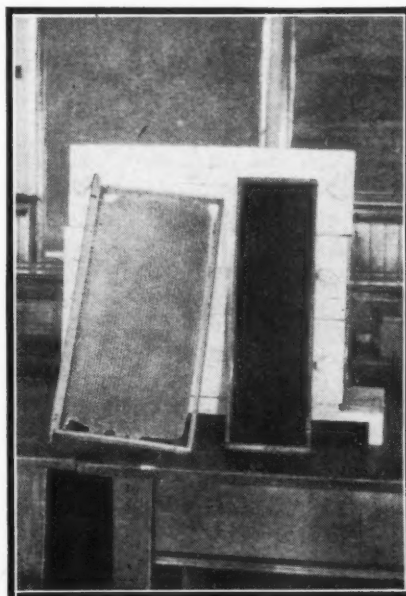


FIG. 7.—COMPARATIVE SIZES OF LANGSTROTH AND HEDDONS FRAMES

than that required by other hives. It is due to lack of care in this respect that some beekeepers have been troubled with bur-combs. With ordinary care hives last a life time, and the extra trouble and expense involved at the outset may be amply repaid by the other advantages.

The reader will see for himself that the value of the sectional hive depends, firstly, upon the man who is going to handle it and, secondly, upon the district in which he is going to keep his bees. No hive can claim perfection, and what is suitable for one set of conditions is very often unsuitable for another. In every case it is essential to know the system of management which is the most practicable in the individual case and then choose the hive which is adapted to the system.

Distance Bees Fly

BY C. F. BUCHER.

THE writer has read, with interest the editorial on page 49 of the American Bee Journal, "Distance Bees Will Fly," also Mr. Baldwin's article in *Gleanings in Bee Culture*, and Editor Root's remarks on the subject, as well as the opinions of other noted writers. The distance at which bees can profitably work probably depends largely upon conditions and locality. In this locality when weather conditions are favorable the bee goes out on a hunt, and when she finds a rich spot she somehow acquaints the others in the hive with the fact.

The senses of sight and smell are no doubt very acute in the bee. Who has not seen them nose from flower to flower without alighting because a

the time there was no nectar present?

If in the spring when the weather is warm enough for bees to fly but not so warm that they will naturally fly a long distance from the hive, you start feeding them, say 50 yards more or less from the hive, either diluted honey or sugar syrup, then set the same kind of feed 100 yards farther away, the bees may not find it for days, but if you carry some bees while they are filling up, whether it be 100 yards or 1000 yards away just so you get one or two bees there, they will note the place, go home and report, though some writers say bees are entirely void of intelligence. In a very short time there will be a crowd of bees where the feed is, neither sight nor scent has taken them there, but some one of the family has found it and told them.

My bees are located near the center, on the south side of a strip of timber nearly three miles long, standing on both banks of a stream. For about two weeks in August, 1914, in the forenoons the bees worked rapidly; they would rush out of the hive, circle upward in a northeasterly direction directly over tall oak trees, and if they continued in a straight course they flew over forest trees for a mile or more. At that time there was little for bees to find except about 2½ miles away, exactly in the direction the bees were flying, there were two patches of buckwheat in bloom; there were many bees working on the buckwheat. I have no proof they were my bees, but circumstances point strongly that way, the bees could not possibly have seen those fields without going many hundreds of feet up in the air; and as for smelling back of more than a mile of timber land, with the wind almost never from the northeast at that season, it seems to me very doubtful.

Littlestown, Pa.

Wintering in the Barn Loft

BY O. H. L. WERNICKE.

MY colonies are in two story 8-frame Langstroth hives with ¾-inch full width openings; by inserting a ¾-inch frame between the bottom-board and hive-body, a space 1½ inches high was provided between the frames.

My city apiary is in the loft of a wooden barn unheated. The hives are placed on benches, 20 inches above the floor, close to and facing the walls. There are 4x16 inch openings through the walls of the barn in front of the hives, and each opening is provided with a generous alighting-board. During the coldest weather these openings are partially closed.

In packing I replace the hive covers with a hive-body, having a queen excluder tacked on the bottom, and tightly stuffed with dry grass; this insures against dampness and makes a warm cover. In addition, the four sides of my hives are covered with five thicknesses of corrugated straw board, pasted together with silicate. This makes a slab about one inch thick, and I cut them into two sizes, one to fit the ends of the hives. The end pieces are somewhat wider than the hive itself so as to lap the side pieces; all

American Bee Journal

are made high enough to reach from the stand or bench to midway of the extra grass-filled body, to prevent drafts. These straw-board slabs are held in place by strong cords, three to each hive, top, bottom and center.

My method of fastening is to form a loop in one end of the cord, so it can be pulled up good and tight; the loose end is then "tucked under;" two half turns are sufficient. By avoiding knots the cords may be quickly removed by simply pulling on the loose end. The slabs and cord made to order cost 20 cents per set and will last many years.

During the month of January the hives were turned end for end and dead bees removed from bottom-boards by means of suitable wire hook, after which the hives were again turned right end to.

I have found this method of packing very satisfactory indeed. My hive-bodies being 8-frame size are light, have no projecting cleats or hand holds; this permits a snug fit for the straw board slabs. I sometimes place a gunnysack or piece of old carpet over the top of the hive to arrest any tendency of circulation between hive-bodies and the slabs. Being indoors,

no covers are required; in fact, my summer covers consist mainly of honey-board, held in place with a brick or block.

The past winter here, according to United States weather reports, was about the usual average for this part of Michigan, ordinary temperatures ranging from 5 to 25 degrees Fahr. above; then we had warmer spells and also cold snaps when mercury dropped below zero for days at a time. About the middle of April is the time when Michigan beekeepers bring their colonies from winter quarters to the summer stands. My method, of course, dispenses with all that, as I leave them in the barn loft the year around. The interesting facts are that all my colonies commenced brood-rearing about March 1, or earlier.

The early brood-rearing and vigorous condition of my colonies generally seems to prove that the packing is adequate to conserve vitality and stores; it also affords opportunities for the much desired cleansing flights on numerous warm days, without attention.

Grand Rapids, Mich.

while the body craves sugar, this is an excess amount of cane sugar, which should not be used in larger quantities than three or four ounces a day. A great deal of this cane sugar is taken into the system by means of commercial candy, many young women being known to consume one-half pound or more at one sitting.

Now, all sugar, particularly cane sugar, has an affinity for lime. In practice this means that an excess of sugar is bad for the teeth since it breaks down the lime substance of which the teeth are made. In addition, while many commercial candies are above reproach in purity, there is still a great mass of adulterated candy manufactured and eaten by our children.

Is there no other form of sugar less harmful than cane sugar and equally attractive with candy? Yes, a sweet as old as biblical times, at least 3,000 years ago, and that is honey. Honey is the most simple and natural of sugars and can be absorbed readily into the blood. The very fact that it seems "sweeter" is thus a guidepost to taking too much. For children especially, honey or food in which honey is used are far preferable to artificial sweetmeats. Every growing child demands a quantity of sugar, but it has been proved that the child who at home receives foods in which enough sweet of the proper kind is given will not crave artificial sweets and candies.

There are many special recipes in which honey can be used. The famous cookies of countries overseas, the ginger-bread and special honey desserts of various countries are fairly familiar. One called instantly to mind is the Turkish dessert, paklava, or a pastry served with nuts and honey. Another foreign confection is pounded nuts and honey worked to a paste, molded and cut into squares after the manner of our own "fudge."

But the housewife can use honey in still other ways than confections. Why not honey in the center of baked apples combined with raisins, or used with stewing fruits of various kinds? As honey has the power of absorbing moisture from the air, any cakes or bread baked with honey keeps better and more moist and less likely to dry out. Honey can also be used on various cereals or on bread, especially the whole wheat and brown variety. Think of the splendid snack for a youngster that a generous slice of whole wheat bread and honey makes.

In preserving and canning, honey may also be used in place of various syrups. Its subtle flavor and healthfulness recommend it. As to expense, while it may seem that honey is dearer than sugar, less of it need be used, so that there is little ultimate difference in price, especially with sugar at the current market figure.

Many housekeepers do not know the right place in which to store honey, and unthinkingly put it in the cellar or a dark, cool place. On the contrary, honey should always be kept in a dry, warm place, even at 100 degrees. If kept in a damp place the "cappings" of the combs become watery and the honey oozes through, but if the comb

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

A Woman Beekeeper in British Columbia

I have at last after four months writing to various bee people, gotten a hive up here. The hive and frames were home made. I have now gotten them into a 10-frame Langstroth Hive, having transferred the bees of the old combs into the new frames, and they have drawn out four frames of foundation.

They are Italian, but the queen and drones are very dark. Unless short of honey they are good tempered, and when they do sting, they are not half as bad as the mosquitoes and black flies.

I do not know what bees will be able to do up here, the northern end of Vancouver Island. As you probably know, it is all forest, but this place used to be an old Indian ranch and there are a great many wild flowering shrubs, currants, gooseberries, salmon berry, wild crabs, plums, maples, etc. Fireweed is supposed to be the main honey crop plant where there is no clover.

I hatched a queen cell in my incubator last week just to see if it would work all right. I wonder that beekeepers who go in for queen rearing on a large scale do not use incubators. One can regulate the temperature and moisture perfectly with a good machine.

MRS. LILLIAN E. BLAND.

[Some years ago there was considerable done in the way of hatching

young queens by artificial heat, but latterly little is said about it. Some believe artificial heat is just as good as the heat of the hives, while others think there is a special benefit from the actual contact of the bees surrounding the queen-cells. We make much use of the Miller nursery, in which queen-cells are put to await the emerging of the virgins, but prefer to have the cells in the nursery as short a time as possible. The nursery is kept in the upper story of a strong colony so the cells have the heat of the hive, but not the immediate contact of the bees. One special advantage of having virgins hatch out in an incubator or nursery is that one may thus discard any that have imperfect wings or other defects, whereas when a sealed cell is given to a nucleus one cannot be sure that the cell does not contain an imperfect virgin, and sometimes a dead larva.]

Honey is a Wholesome Sweet

It is a matter for no small gratulation that so well written an article as follows should be published in a paper having the immense circulation of *The Chicago Daily News*, from which paper it is copied.

Dry statistics tell us that every man, woman and child in the United States consumes, on an average, eighty-five pounds of sugar annually. Most health experts will agree, that

American Bee Journal

is kept where the air is warm and dry it will remain in more perfect condition. Owing to the strictness of national food regulation there is practically no danger nowadays that honey is adulterated, and the housewife who finds a reputable, standard brand need have no fear.

Keeping Frames of Honey

1. What is the proper way to keep frames of honey during the winter to be used in building up colonies in the spring? Can they be stored in empty hives and kept out of doors, or will freezing injure them?

2. Can frames containing unsealed honey be kept for this purpose?

3. Can unsealed honey in partly filled sections be kept through the winter to be used next season as baits? Miss R. Maine.

1. Such combs can be kept wherever comb-honey keeps well. Outdoors would not be the place for freezing would crack the combs and also be likely to make the honey granulate. In the cellar is a good place if sufficiently dry. Beside a furnace in the cellar is an excellent place. The combs will keep fairly well in any room where it seldom freezes, the ideal place being in a room with a somewhat steady temperature never below sixty, up to a hundred degrees doing no harm.

2. Yes; but if in a place at all damp the honey will absorb moisture and become watery more readily than will sealed honey. In a warm, dry place, unsealed honey will keep all right.

3. It is not advisable to try such a thing, for some of the unsealed honey or even the sealed honey, will be pretty sure to be candied, and when filled such sections would not be marketable. The thing to do with such sections is to have the bees clean them out this fall, leaving them perfectly dry. If there is enough honey in them they may be extracted before being given to the bees. It is difficult to get bees to clean out sections by putting them on the hives, so they must be set out in the open, and when this is done the bees are sure to gnaw the combs to pieces unless a large quantity is exposed at once. If you have only a few sections to be cleaned out, allow only a very small entrance to the pile of sections, so that only a single bee at a time can enter.

Annual Field Day Meet and Joint Meeting of the Worcester County Beekeepers' Association and Eastern Massachusetts Society of Beekeepers

This year at the invitation of the Worcester County Beekeepers' Association the Eastern Massachusetts Society met with the Worcester County Association at the home of Mr. W. E. Parker, West Boylston, on Saturday, August 5th. From 11 o'clock till 5 the air hummed with the sound of bees—not the insects themselves, entirely, but with discussion and genial

talk about them. The day was rather overcast, but pleasant and there was a good gathering. All enjoyed the kindly hospitality of the host. Dinner was served on the basket lunch plan, after which came the speaking.

The special guest of honor, Mr. C. P. Dadant, of Hamilton, Illinois, Editor of the American Bee Journal, spoke delightfully and instructively on Prevention of Swarming. He was followed by Mr. Arthur C. Miller, Prov-

dence, R. I.—subject: "What to do Now"—Mr. Allen Latham, Norwich, Conn., and Dr. Burton N. Gates, Amherst, Mass.

Dr. Gates spoke particularly of the symptoms of bee paralysis which has appeared lately in different parts of the country. Later he demonstrated the proper method of opening a beehive, with much practical advice.

JOSEPHINE MORSE, Sec.
South Lancaster, Mass.

MISCELLANEOUS NEWS ITEMS

Western New York Honey Producers' Association Meeting

The basket picnic and field meeting of the Western New York Honey Producers' Association which was held at the home and apiary of Mr. Roy Wisterman, at Dysingers Corners, N. Y., was a decided success. Mr. Wisterman does not claim to be a professional beekeeper although he finds it a profitable addition to his extensive farming operations. He says he does not know very much, but the doubtful only have to look at some of the fine queens which he reared by the grafting process to know that he is no backlotter at the beekeeping industry. Lunch was served on the spacious lawn by the wives of the beekeepers. Mr. J. Roy Lincoln, of Niagara Falls spoke on the management of bees in an outyard with the minimum of labor. Shortly before fruit bloom he unpacks his bees and clips his queens also giving a super which is in reality another body. Shortly after fruit bloom he places a frame of brood from the lower story in this super, and leaves them alone until clover starts when he takes one frame of brood and two frames containing the most honey and places them in another body the brood in

center and the honey on outside filling with empty combs or foundation. This body is now placed on the bottom board with an excluder over it and the bees are brushed off the combs. The queen is placed in the lower story with the one frame of brood, and the remaining brood is placed over the excluder to hatch out and combs are then storing combs. Ten days later any queen cells that may have been started are removed.

Mr. William Vollmer of Akron, N. Y., told of his varied experience in buying bees in combless packages from the south, having bought both one and two pound packages. He says that with the one pound package with queen it is advisable to give them empty combs with a frame of brood if they are received early in May, in order to make them a remunerative proposition. With the two pound package it is also advisable to give a frame of brood but the combs are not quite so essential. With the two pound package one is generally sure to get sufficient honey the first season to pay.

Mr. John DeMuth, of Pembroke, N. Y. told of his experience with European foulbrood. A good strain of in check but some strains are almost



GROUP AT THE WESTERN NEW YORK HONEY PRODUCERS' MEETING

American Bee Journal

as susceptible as blacks. Caging queens for a period of time sometimes effects a cure but killing old queens and giving young vigorous ones is another method. Foul brood seems to grow less rampant after being in a locality two or three years and gradually wears itself down. Mr. DeMuta has visited a large number of beekeepers in the western end of the state and they all report a small amount of European foul brood. The most of them treat it by one of the foregoing methods and consider it the same as weed in your garden; eradicate it this year and you may or may not have any next year. With a little help it can be held in check so as not to be as serious as might be otherwise expected.

Michigan Beekeepers to Eat Thanksgiving Dinner in Lansing

On November 30, December 1, and 2, Michigan beekeepers will gather at Lansing for the fifty-first meeting of the State association.

The opening day coming on Thanksgiving will enable beemen to renew acquaintance with one another over the festive board, and will be an

every share should, and in many cases does, return a fine profit the next season.

Many of our most successful beekeepers will be in attendance, beemen who count their crops in tons rather than in pounds, and a few minutes conversation with these men will be worth all the expense and trouble of coming to the meeting. If you are looking forward to making beekeeping a profitable part of your work in the future, by all means take in these meetings in Lansing.

We do not want the beekeepers to forget the exhibit side of the convention. We shall have plenty of room to display honey and other exhibits, and as we are planning to give diplomas and medals to be won outright, besides the challenge medals, we are expecting a nice showing of honey that will add to the general interest of the convention.

We hope to include other features which will tend to enliven the proceedings and with the banquet which Messrs Root & Hunt are providing all beekeepers present, we should easily have a convention that will rank among the largest and most en-

joyable ever staged by a State Association. We will do our part and hope and expect you to join with us in making this coming meeting a hummer. Eat your Thanksgiving dinner in Lansing.

F. Eric Millen, Secretary-Treasurer
Michigan Beekeepers' Association.

What About Mexico?

El Agricultor Mexicano, a farm paper published in Spanish at San Antonio, Texas, had in one of its recent issues a nice article on beekeeping in Mexico. From what we have learned in the past, there is an unlimited field for the development of beekeeping in this country, and we hope that the time is fast coming when conditions will be settled so that beekeeping may be developed there at least to the extent that it may relieve a portion of the suffering in that strife-ridden country.

Illinois-Wisconsin Meeting

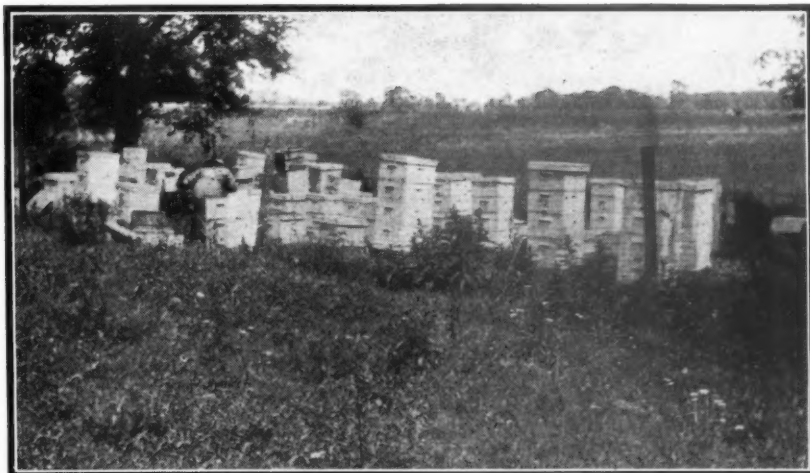
The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association, will be held in the supervisors room in the Court House in Rockford, Illinois, on Tuesday, Oct. 17, 1916. All are cordially invited to attend.

B. Kennedy, Sec'y, 2507 W. St.
Rockford, Illinois.

Bees Have a Color Sense

The following, a part of an article written in a late issue of the St. Paul News, is copied, not so much from the fact that we are offering our subscribers something new, but to illustrate that the general public is being educated as to the value of bees, and are also getting an insight into beekeeping in general.

"The bee confuses red with black and blue-green with gray. It distinguishes only "warm" from "cold" colors and confuses orange red with yellow and green blue with violet and purple-red. Thus its sense of color is comparable to that of a man who is red-green color-blind.



J. ROY LINCOLN'S APIARY OUTSIDE OF NIAGARA FALLS

auspicious day on which to unite and discuss the summer's work, and make plans for a more successful season in nineteen seventeen. The holiday will also enable beekeepers to bring their wives along, so that we expect this meeting will be largely a family affair. Many ladies have already intimated that they would be present to help swell the attendance and enjoy a good time.

We are preparing an interesting and a profitable program, which will be published in the November issue, and we can assure all those planning to attend, that we are going to have the best meetings that the Michigan Beekeepers Association has ever had.

There are many beekeepers who do not yet fully realize the value of these conventions. A beekeepers' convention is an investment for the beekeeper, and it remains with him to secure as many shares as possible, because



APIARY OF WM. VOLLMER, OF AKRON, N. Y.

American Bee Journal

"Such colors which are not distinguished as colors by the eye of the bee, that is, blue-green and pure red occur very exceptionally in flowers. Here is support for the view that flowers have developed their colors as an adaption to their requirement of fertilization.

"In many blossoms contrasting colors are combined, and these are interpreted as inviting the visits of insects, especially where they form "sap-colors." Scientific investigations of the color-sense of the bee prove that differences in colors recognized by human eyes are also perceptible to this insect. In vari-colored blossoms scientists find almost exclusively that those colors are combined which are differentiated by the eye of the bee."

Ontario Crop Report and Prices

The Ontario Beekeeper's Association, under date of August 11, published a report of the crop in Ontario for 1916. The total of honey produced is 2,127,903 lbs. or an average of a trifle under 90 pounds per colony, as contrasted with a 59 pound average in 1915. In spite of the large crop this honey seems to be selling at such a rapid rate that the Ontario beekeepers will get as much as last year for their honey. In fact the prices as recommended by the committee are almost identical with those of last year. They are as follows:

No. 1, Light Extracted, wholesale, 10c to 11½c per lb.

No. 1, Light Extracted, retail, 12½ to 15c per lb.

No. 1, Comb wholesale, \$2.00 to \$2.75 per dozen.

No. 2, Comb wholesale, \$1.50 to \$2.00 per dozen.

These prices are f. o. b. in 60 lb., 10 lb. and 5 lb. tins, the former being net weight with the tin thrown in, the two latter being gross weight.

Old Bee Journals

Can you give me the names of old Bee Journals in America with dates of existence? A Subscriber.

When I gave the names of the oldest bee magazines, I had no idea of giving a list of them all. In the first number of Gleanings, published January 1873, there is a mention of the then existing bee periodicals of America, all of which are defunct, except the American Bee Journal and Gleanings. This list included the Beekeepers' Journal, established in 1869, the North American Bee Journal, the National Bee Journal, the Annals of Bee Culture and the American Bee Journal.

Moon's Bee World, the Beekeeper's Magazine, the American Bee Keeper, the Canadian Bee Journal, the Southland Queen, the Pacific States Bee Journal, the Rocky Mountain Bee Journal, the Western Bee Journal, the Rural Bee Keeper and the Progressive Bee Keeper have all appeared and disappeared, most of them after several years of existence. I have made the mistake of destroying a number of these old files, because

they were so numerous, but am sorry of it now. There were others, of which only one or two numbers appeared but I have no longer any trace of them.

Among the foreign ones L'Apicoltore,

of Milan, Italy, 1868, is still published and I have every number of it, for it was sent to my father first and to myself afterwards, as honorary members of the Italian Association. I feel quite proud of this. C. P. D.

DR. MILLER'S



ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Ventilation

1. What is the proper space to allow between the bottom board and the hive in this climate? It is an extremely variable climate. We have had three weeks with the temperature as high as 88 degrees in the shade, but today it is not over 75 degrees. What would be a safe space to leave for the summer, and how would you ventilate on one of these very hot days when the bees hang out in clusters?

2. Does it bother the bees and get them discontented opening and closing the entrance space to meet the extremes of temperature; that is, opening it in the morning and closing it at night, or is it not advisable to do that? This is my first season, and I do not know much about ventilation.

ONTARIO.

ANSWERS.—1. The space between bottom-bars and floor is not a matter of climate. In summer it should be the deepest you can have without the bees building comb in it, and that is probably ¼ inch or a little more. I use a depth of 2 inches, and then prevent building down by putting in a bottom-rack, and explained in "Fifty Years Among the Bees." In hot weather, and that's most of the summer, I also give ventilation by shoving the super forward on the hive so as to make a space of ¼ inch or more at the back end.

2. It will not trouble the bees, but is a good deal of work for the beekeeper.

Miscellaneous Questions

I am thinking of running for extracted honey next year, as I have not much time to spend with my bees.

1. As soon as I add extra stories my queens will enter them and deposit eggs in the extracting combs. Will I be able to secure a first-class grade of white clover comb honey from combs where brood has been reared?

2. Will I have to use queen-excluders if I want to get white honey?

3. Is there as much money in extracted honey at 7 cents per pound as in comb honey at 17 cents?

4. If you were going to begin again which would you produce?

5. What hive would you choose?

6. Single or double walled?

7. Eight or ten frame?

8. If I start colonies with two frames of brood and add bees about June 15 next year, will they build up to strong colonies by fall, provided they are supplied with full sheets of foundation as needed?

9. If pure Italian queens are mated will their drones be pure?

10. Has the German or black bee any yellow markings?

11. How many pounds of comb honey ought an average colony produce this year?

12. How is candy for queen-cages made?

ILLINOIS.

ANSWERS.—1. Yes, after the brood has hatched out, but not while brood is still in them.

2. Nearly all think an excluder a necessity in working for extracted honey, although some say they can keep the queen down without an excluder by keeping full combs

immediately over the brood-chamber.

3. Not as a rule.

4. I think I would lean toward extracted.

5. Likely the dovetailed, largely because the most commonly in use.

6. Single.

7. Ten.

8. Yes, provided the season is good where there is fair pasturage.

9. Yes.

10. No.

11. At a rough guess, all the way from nothing to 200, according to place, bees and management.

12. Take liquid honey, preferably warm or hot, and knead into it all the pulverized sugar you can, making a stiff dough. Let it stand a day or more, then knead into it again all the sugar you can.

Clipped Queens and Swarming

In the July 28 issue of the Country Gentleman the party who wrote the article on bee-keeping makes the statement that he gets to his bees only occasionally, and that by having his queen's wings clipped he can easily ascertain which hives have made attempts to swarm in his absence. Will you please tell an amateur how he can tell this with any degree of certainty? MISSOURI.

ANSWER.—You can tell something about it by looking in the hives. The queens' wings being clipped, if a colony swarms the swarm is likely to return to the hive, although in some cases it may go to the wrong hive. If you find sealed cells in a hive during the swarming season, it is a safe guess that the colony has swarmed or that it will swarm within a day or two, and there's no way to tell which of the two guesses is right. If you find unsealed queen-cells, or even eggs in queen-cells, you may know that swarming is contemplated, and that a swarm is likely to issue with the sealing of the first queen-cell.

Best All-Purpose Bee—Introducing Queens

1. Will an entrance guard that is too small for queens and drones to enter keep bees from mixing?

2. What is the best bee-pasture?

3. What is the best all-purpose bee?

4. Is it a good way to build up an apiary by buying tested queens and introducing them to colonies?

5. How do you introduce queens to colonies of bees?

6. What is the best kind of hive for comb honey? MISSOURI.

ANSWERS.—1. No.

2. In some places one thing, in other places another. In your State white clover is likely the best.

3. Most beekeepers prefer Italians.

4. Yes, and it's also a good way to buy untested queens and buy a larger number.

5. One of the ways most commonly in use

American Bee Journal

is to introduce by means of an introducing-cage provisioned with candy, the bees eating out the candy and thus allowing the queen to get out of the cage.

6. The one probably most favored among beekeepers is the 10-frame dovetailed.

Requeening—Kind of Super—Rendering Wax, Etc.

1. When is the best time to requeen, in the spring or autumn?

2. I only want to keep three or four colonies of bees for family honey. Would you advise comb or extracted honey?

3. What do you think of "chunk honey" production, and what hive is best for it?

4. For extracting, which is the best the deep or shallow super and frames?

5. I have been thinking of using the shallow super 5½ inches deep so I could produce comb, extracted, or chunk honey as I may choose. What do you think of this plan?

6. I have one colony which is mixed, some bees show three dull yellow stripes, some bright yellow stripes and some all black. If I requeen with a pure Italian queen will they make a good colony?

7. What is the matter when the bees on the alighting-board chase each other around in a circle? No excitement in the hive nor signs of robbing.

8. Do you think I can make my hive-bodies and supers cheaper than I can buy them?

9. How can I render wax so it will be clear and free from dirt and trash without an extractor?

10. I caught a swarm in a decoy box, and as I was taking it down out of the tree it fell to the ground, breaking the combs and killing the queen and many bees. When I opened it up to transfer them the remaining bees acted crazy; they would go into the air, then cluster, then go into the air like they were crazy, and finally left. Do you suppose they missed their queen, and where do you suppose they went?

11. How do you like a deep cover with 2-inch air space above the sections, the cover covered with asbestos roofing? IOWA.

ANSWERS.—1. In the fall, near the close of the harvest or a little after. Yet on account of the time gained, it often happens that it is better not to wait so late.

2. Hard to say; probably extracted.

3. I hardly think you would like it for your purpose. In Texas it is popular. Any hive will do for it.

4. Shallow; except that it is convenient to be able to use the same combs in brood-chamber and super.

5. All right; only if you want to produce sections, better use the popular 4¼x4¼x1½.

6. Sure.

7. I don't know; I think it is a sort of play.

8. The chances are nine out of ten that it will cost less to buy them factory made, and ten out of ten that they will be more satisfactory.

9. The secret of having it clear is to let it stand hot a good while; in other words, be a good while in cooling. If there's only a small quantity of it, have a good deal of hot water with it, so it will not cool so quickly.

10. Yes they missed their queen, and likely went back to the old home from which they swarmed.

11. All right, provided no bee can get into that 2-inch air-space.

Queens Disappearing

In June I hived a small swarm of bees, the queen looked as if she had been mated with a black or hybrid drone, so I gave them some brood from an Italian queen. In two or three days I examined the hive and the queen had begun to lay eggs, and was depositing two and three eggs in the same cell. In a day or so I looked again and she was gone. I gave them a frame of brood from another hive different from the first and they began to rear a queen. In due time she hatched out and was a nice Italian queen. She had destroyed all except one, and the bees had a strong guard over her. When I examined the hive again she was gone, and the next day she had not returned. The next day another queen hatched; she was of a darker color, but she soon disappeared. The hive was

painted blue, and set at the end of the row. The rest of the hives were not painted so she had a good chance of finding her hive. Did she get lost or were the bees hostile?

TEXAS.

ANSWER.—There is no way to tell just why the queen disappeared, though such disappearance is unpleasantly frequent. Sometimes the queen is lost on her wedding trip, sometimes the bees swarm out with her, and sometimes they ball her on her return.

Keeping Section Honey Over Winter—Queen Breeders

1. I have put six brood-bodies on to get frames of honey to feed with and to make increase next season. How can I keep these without putting them in a warm room 45 to 70 degrees?

2. Also to keep section honey, will it not keep well in a dry room where it freezes? One with only 500 or 600 pounds cannot afford to keep a room to a certain temperature for such a small amount.

3. Who buys all the queens that are reared by so many queen rearers? For if one has good Italians and they requeen themselves, then why so many queen rearers?

MISSOURI.

ANSWERS.—1. A good cellar will do. In-duced in a smoke-house, or almost anywhere, it will do well enough, only some of the honey may candy.

2. Freezing will make more cracks in the surface of the sections. That will not do for sections, although it may do no great harm to the combs previously mentioned. I have known sections to keep well in a garret, but they had been in the garret during some of the hot weather, so as to get a good roasting.

3. Who buys all the cattle sold for breeding purposes, and all the settings of eggs? You say, "If one has good Italians and they requeen themselves," but the matter is not so simple as that. The great majority of beekeepers *don't* have good Italian queens to begin with. The average beekeeper has bees with more or less black blood in them. He buys a pure Italian queen, and some of the queens he rears from her will be purely mated, but the most of them will not, for there are more dark than yellow drones in his apiary and in the surrounding apiaries. So he will have to keep getting fresh stock to work out the dark blood. Even if his bees are all Italian, if he is wide awake he will buy afresh now and then in the hope to get something better, just as it is with cattle and chickens. Then there are a few beekeepers having large apiaries who buy queens by the hundred to replace old queens, believing they can buy for less than they can rear young queens. The result of all this is that instead of decreasing the number of queens sold seems to be constantly on the increase.

Running for Comb Honey

How can I run for comb honey and at the same time prevent increase? I have read the plan written by G. W. Joice, in the July 15, 1915, issue of *Gleanings*, page 578, but I do not want to use the extracting super, as he advocates, if I can help it.

ILLINOIS.

ANSWER.—The plan given by Mr. Joice is good, provided you want part of your honey in the extracted form. In my book, "Fifty Years Among the Bees," you will find given very fully the plans I have used to get along without extracting and without increase. One way is something like Mr. Joice's plan. Put all but one brood in a second story over an excluder, leaving the queen in the lower story with the brood at one side, and next to it two or three frames entirely empty, not even a starter or any kind in them. Before putting the brood in the second story, kill all queen-cells on them. In ten days again

kill cells on these combs and return them to the lower story. Make what use you like of any combs built in the empty frames, but generally there will not be very much in them, and you can melt it up for wax. The combs that you restore to the lower story will have in them a good deal of honey, but the bees will empty it out and carry it up into the sections. Thus you have no increase, and all the honey goes into sections.

European Foulbrood

1. I had a battle with the European foulbrood four years ago, and last week I noticed several affected cells in three colonies. I sent a sample of brood to Washington, D. C., and they called it European foulbrood. I cannot understand why I cannot clean it from the entire apiary and keep it out. The whole apiary is headed with Moore's queens or some equal to them. I have tried most every method known, and in several cases it reappears, but most cases are new ones. How can I rid my apiary of this pest? I have read your method in "Fifty Years Among the Bees," but you do not say that it has been thoroughly proven. It seems to be an easy way if it works.

2. Will bees ball a queen when freed after being caged for a week in the hive?

3. Is there any danger of spreading European foulbrood by using combs from supers of colonies affected by foulbrood on or in the brood-chamber of healthy colonies?

KENTUCKY.

ANSWERS.—1. The two kinds of foulbrood have become so generally distributed that one or the other is likely to turn up almost anywhere. But there's no great occasion to be discouraged at the presence of European foulbrood. It is no worse to fight than weeds on a farm. Plenty of farmers raise good crops, and yet are never entirely free from weeds. Indeed, I wish I could as easily battle with weeds in a garden as with European foulbrood in an apiary.

I did not want to claim too much in "Fifty Years Among the Bees" for my treatment of European foulbrood, but I am very confident that no better treatment has yet been offered. Just cage the queen for 10 days, if the case is a mild one and the queen good, and in a severe case kill the queen and after ten days of queenlessness introduce a vigorous Italian queen, or else give a ripe cell at the same time the queen is killed. Even if you find only one bad cell, treat it at once. You may not become entirely rid of it, but by thus treating it you will have less trouble with it than with weeds in your garden.

2. "Bees do nothing invariably," but in very rare cases would the bees harm a queen after so long a confinement in their hive, always provided there is nothing else in the hive that they in any way consider in the light of a queen.

3. With American foulbrood, yes; with European foulbrood there is very little danger, although I suppose there is always a possible danger.

Hunting Wild Bees

1. From whom could I get lessons or advice how to hunt wild bees, or through which department?

2. Would home-made hives be good for bees? Should the boards be planed from the outside? Should they be painted and what color?

3. Will plaster of paris or putty injure bees?

PENNSYLVANIA.

ANSWERS.—1. I don't know. Not a very large proportion of beekeepers ever have done anything at hunting wild bees. Yet it is possible that there may be some one near your own home who is an expert in that line, and an advertisement might bring you the chance you desire.

2. Home-made hives are just as good for the bees as any other, but likely not to be so

American Bee Journal

good for the beekeeper as those made at a hive factory. When I began beekeeping there were no hive factories, and I got a cabinet maker to make some hives. They were neatly made, but *had no entrance for the bees*. The cabinet-maker had overlooked that rather important part. Like enough you will find it cheaper to buy hives made in a factory rather than to make them yourself, or have them made near home. At any rate, get at least one hive as a model.

The outside of the hives should be planed, and it is generally thought they should be painted. White is a good color.

Amount of Sugar to Feed—Wintering, Etc.

1. Can you tell me how many pounds of sugar a strong colony needs for winter in a 10-frame hive; that is, when they have very little honey?

2. Some books say not to heat sugar syrup to the boiling point, as it kills the bees. Do you think it does?

3. My bees have brood in the extracting super, what can be done about it? I would like to have it filled with honey, as the combs are all built.

4. Is it best to winter bees in a cellar here in Montana?

5. Is a cellar with ground over the top and sides all right to winter bees in?

6. What month do bees start to swarm in this section? MONTANA.

ANSWERS.—1. To be on the safe side, better not give less than about 30 pounds. That's for the weight of the dry sugar. But you must remember that sugar doesn't equal good honey if you want vigorous bees.

2. It is generally believed that burnt sugar is death to bees in winter, and I suppose that's right. But you can boil syrup without burning it. But what do you want to burn it for, or even boil it? The sugar has already been cooked all it needs, and if you dissolve it in cold water it will be just as well as to boil it. The only thing gained by boiling the water, or even warming it, is that it dissolves the sugar more quickly.

3. You can leave the brood there until the young bees emerge, and then the bees will fill with honey the cells as they are vacated. Unless, however, an excluder prevents the queen going up, she is likely to lay again in the same cells.

4. I don't know very much about Montana, but as it lies above the parallel of 45 degrees it must be pretty cold in winter, and I should suppose cellaring would best, but a man 100 miles north of me might winter much better outdoors than here, if he is in a very still place.

5. Yes.

6. You ought to know about that better than I. At a guess I should say about the first week in June, and if I am wrong some one from Montana may be kind enough to correct me.

Fastening Foundation in Frames—Keeping Pollen Out of Extracted Honey

1. What is the very best method for fastening foundation on flat top bars in extracting frames?

2. Describe one good way by which the beginner can melt old combs into wax.

3. What should I do to make the bees build comb clear from the top to the bottom bar in the brood and extracting frames?

4. Describe the correct method of wiring brood-frames so that when the wire is imbedded in the foundation it will be perfectly straight.

5. Is there any way to prevent bees from putting pollen or bee bread in the extracting frames? If large extracted honey producers like the Dadants are troubled with pollen, how do they keep it from getting in the honey and spoiling its taste?

6. What is the best thing I can use to warm my wire imbedder or uncapping knife? MISSOURI.

ANSWERS.—1. Probably nothing better than

melted wax poured along the joint.

2. I suppose you mean a beginner who has no wax-press. Here is a way given in "Fifty Years Among the Bees": "An old dripping pan (of course a new one would do) had one corner split open, and that made the extractor. The dripping-pan is put into the oven of a cook-stove with the split corner projecting out. The opposite corner, the one farthest in the oven, is slightly raised by having a pebble or something of the kind under it, so that the melted wax will run outward. A dish set under catches the dripping wax, making the outfit complete. Of course, the material to be melted is put into the pan."

3. There is probably no better plan than to use foundation-splints, and have the foundation entirely fill the frame, as described in "Fifty Years Among the Bees," page 80.

4. Use the spur embedder, doing the work in a room so warm that the foundation will be somewhat soft.

5. There is little trouble unless the brood-frames are shallower than the Langstroth ($\frac{3}{8}$). The Dadants have a still deeper frame. Even if there should be some pollen in the extracting-combs, it will not generally be thrown out by the extractor.

6. A dish of hot water.

Keep Comb Honey in Dry Place

I took off some sections of comb honey July 11 and put them in the ordinary shipping-cases and stacked them in a moderately warm place. On examining them a few days since, I found the honey oozing out of the combs.

1. What is the cause of this?

2. Does honey that is not good and ripe do this way? It was well sealed over and tastes all right yet. I think it is mostly gathered from sunflowers, as that is the best honey flow we have here. It has been very warm and dry here for the last 25 days.

3. Does honeydew fall this time of year?

4. What kind of honey does honeydew make? I notice it is not accepted in most grading rules as good honey.

5. If I have a lot of extra hive-bodies containing honey and pollen that the queen is not occupying at the close of the season, which is the better way to keep them over winter by placing them under or over the hive? If under, would it be a good idea to have an entrance between the two? MISSOURI.

ANSWERS.—1. When honey oozes through the cappings it is because the air in which they are is laden with moisture. That hardly seems to agree with your statement that it was very warm and dry. Still, as it was in a moderately warm place, it may have been in a place somewhat cooler than the air surrounding the place, in which case the incoming air would give up some of its moisture upon cooling. There might have been less trouble if the honey had not been closed in cases, but loosely stacked up, with

fair ventilation.

2. Yes, the less it is ripened the more danger. But as it was sealed, it would be expected to be ripened; and yet honey is sometimes sealed without being fully ripened.

3. Yes.

4. It varies very much, from very dark, disagreeable stuff to that which is palatable.

5. I don't believe it makes a wonderful sight of difference, although they are usually placed over. If placed under, there would be less danger of having the entrance clogged if it were between the two stories.

Swarming—Feeding

1. Does extracted honey bring more than comb honey, and how much?

2. What can be done to make bees work in the sections?

3. Will bees swarm when the sections are on?

4. How many times does a colony swarm in a season?

5. What is the best feeder for winter use?

6. Would it pay to feed bees in the spring before the flowers bloom? VERMONT.

ANSWERS.—1. In a very few places extracted honey brings as good a price as comb honey, but in most places comb honey brings something like 50 percent more than extracted?

2. Give them a bait in the form of comb that has been previously drawn out?

3. Yes, indeed. How I wish they wouldn't.

4. Sometimes not at all; and from that all, the way from once to five or six times.

5. To feed in the fall for winter use, probably the Miller feeder is most generally used.

6. If the bees are short of stores it will pay big; if they have honey enough in the hive it will not pay at all.

Using Bisulfide of Carbon

How can I use bisulfide of carbon for the wax moth? How much does it take, and does it in any way injure the honey? VERMONT.

ANSWER.—At one time I fumigated a lot of brood-combs with bisulfide of carbon, or carbon disulfide, and I'll tell you just how I did it. I piled up the combs in hive-bodies four or five high. I made dough of flour and water, and upon the upper edge of each story I put dough, so as to make a close fit. Over all I put an empty hive-body, and in this put a saucer into which I poured nearly a saucerful of the liquid, and quickly put on the cover, of course having the cover a tight fit with the dough. I left all closed two or three days. Larvæ and eggs of the wax-moth were all killed. I don't think it would injure comb honey, and I hardly think there is danger from too much.

REPORTS AND EXPERIENCES



Queens in Upper Story

DR. C. C. MILLER, Marengo, Ill.—

Dear Doctor:—In answer to one of your queries, you refer to the rearing of queens and their fertilization in the second stories, but that it was not yet a success. Now, here is a plan that has been a success with us this season (one swallow doesn't make a summer).

In the spring all colonies, as a rule, have single stories, and we put on a second story (without queen excluders) as needed. We have an entrance in this second story, turn-

ing it to the rear of the first story, so the entrances will be in opposite directions. We leave the colony in this way until in need of more room, the queen will by this time probably have brood in different stages in the second story. Now find the queen so as to be sure where she is, put her in the first story, put on excluder (on first story) raise two story and put empty super between it and the first story, being sure the entrance is kept opposite to the first story entrance. The empty super (of course filled with combs or foundation) should have no entrance in it. Now as room is needed, keep

American Bee Journal

the story on top that has the entrance and brood in it. In about a month there will be laying queens and brood in the top story. If the story with brood is next to the excluder a lot of the queens hatched disappear, but if there is a super between and the entrances on opposite side, all seems well, at least that was the rule with us this season.

We had 11 as fine swarms and queens this way as one could wish, practically no failures where above conditions existed, and the colonies were strong and had brood in the second story. These second story colonies were set off for increase.

Wapakoneta, Ohio, DR. O. H. GIBBS.

Season Not Good

The honey season here is over for clover. It was too wet and cloudy for a good harvest. Clover commenced to bloom about June 5 and ceased July 20. On account of so much rainy weather the bees could not gather the honey. Only about half of the sections that were built out are finished. Many sections are half and three-fourths full only, and considerable honey unsealed. We will, when fully ripe, extract all the unfinished sections and return them to the hives for the fall crop.

Murrysville, Pa., July 26.

Many Swarms

I have been bothered with swarming this season. Formerly I have had good success with putting the brood up over an excluder, but this season it was no use, as all but one that I put up swarmed, and that one was queenless. Still, I cannot complain, as I got 600 pounds of white honey from 75 colonies, spring count, and increased 150.

Clarksburg, Ont., Aug. 11. E. T. KNOLL.

Short Clover Crop

The clover harvest was good, but lasted only 15 days. My good colony on scales averaged 13½ pounds per day.

We had no nectar from basswood, and no rain worth while in seven weeks. Bees are not making a living now. No white clover in sight.

Greenville, Wis., July 28.

A Good Crop

The honey crop has been fairly good throughout this locality. Bees have averaged about 60 to 80 pounds per colony. Spring count 12, increased to 33, and they have produced 600 pounds of fine fancy comb honey. My best colony produced 128 lbs sections in six weeks of the white clover flow.

Edwardsville, July 26. L. WERNER.

Fine Clover Crop

The early part of this season was fine, the finest crop of white clover that I ever saw. Then the dry weather came on and cut the clover short right in the height of the game.

I have taken from 65 colonies, spring count, about 4500 pounds of the very purest white clover honey that I have ever seen, and I have also increased to 120 colonies. We have had no rains in this place since the first of July, but we are having a good rain today, and we expect some fall honey.

Milo, Iowa, Aug. 14. B. A. MANLEY.

Two Valuable Old Books On Bees

American beekeepers welcome the reprinting of the original work of Langstroth. It was the first practical work on the honeybee ever written, and well deserves a place in the library of every one interested in this subject, whether veteran or tyro.

The writer, while in attendance at the Root Field Day Meet at Jenkintown several years ago, secured an original copy of this immortal work at the famous old book mart of Leary's. Aside from being in a fine state of preservation, it is also an autograph copy from the author. On the sheet inside the front cover appears the following neatly written with ink: "From Rev. L. L. Langstroth to Susanna Turner, September 15, 1854."

Another valuable and interesting volume in the possession of the writer is a copy of the third edition of Huber's work entitled, "New Observations on the Natural History of Bees." On white paper, cut the size of the book pages and pasted inside the front

cover by a former owner, has been copied from the Memoirs of the Empress Josephine, Vol. I, page 122, a brief account of Huber's affliction and romantic marriage. Immediately following this, the writer relates an instance quite out of the ordinary and not generally known among the beekeeping fraternity.

During the wars in which the great Napoleon hoped for a fulfillment of his dreams for universal empire, Huber's wife placed pins in a map in order to give him a clearer conception of the movement of the troops.

These old works are becoming rare, and the present European conflict will no doubt destroy numbers of those valuable early records of investigation for the advancement of bee science. Such works as Swammerdam, Huber, Reaumur, Bevan you'll not pick up every day.

Nisbet, Pa.

GRANT STANLEY.

Beekeeping in Arizona

I have been a close reader of the American Bee Journal since a boy of ten had some sad experience wintering bees in Ohio, but here in Arizona we leave the bees under our brush sheds with the supers on all win-



B. A. HADSELL.

ter, the bees flying nearly every day; therefore, they use more honey than they do in a northern climate.

I run from 11 to 16 apiaries, or 1300 to 1700 colonies without help except in swarming and extracting. My bees are in reach of 12 to 15 acres of alfalfa, also mesquite, with an irrigating canal and Gila river for water. I run for extracted honey only; leave it on the hives until the bees ripen and seal it. I use the 10-frame Langstroth hive; usually have two supers, all combs drawn from full sheets of foundation; have one extracting outfit screened in on a low wheeled wagon.

I use the latest improved reversible extractors, run by a 2½ horse power gasoline engine. It also runs a large fan similar to an electric fan the honey running through a cheese-cloth strainer into a 150-gallon tank on the outside. The uncapping box has a false bottom with water heated by gasoline. Half of the capping box has a screen and bottom to catch the liquid honey. The cappings after draining are sheaved over into another division where they melt and run into a small tank, and the wax forms into a cake. The honey being heated has lost its flavor and is also dark, and is kept to winter weak colonies.

I supply a large number of stores for the retail trade, put up in 2, 3, 5 and 10 pound friction top pails with my label with directions for melting if kept until cool weather and granulating in the fall. I melt it all as I put it up over a slow fire, setting six cans in a tank of water with irons under them to allow the water to pass under, being careful about over-heating, as it takes off the flavor and makes the honey dark.

I grade my honey and set the price according to color and flavor; no dark or strong honey is put up for table use. Heretofore all grades of honey were dumped on our local market at a very low price, even the sweet water or nectar just as it comes from the flowers was

extracted before evaporated or sealed and sold for honey. I am writing frequent articles in our local papers, urging the beekeepers to ripen their honey and grade it, and I also urge the consumers to always sample it before buying, as there is as much difference in honey as in butter. Two women may have their cows in the same pasture; the one makes a fancy grade and gets a good price the other can hardly give it away. So it is with beekeepers one-half mile apart, one allows the bees to ripen it and gets a fancy grade, the other extracts as fast as gathered, gets nearly double the weight, but not fit for table use.

Buckeye, Ariz.

B. A. HADSELL.

The Crop in Quebec

The year 1915 was a disastrous year for me, as white clover was completely missing. It is the most important honey plant of Quebec. I harvested only 750 pounds of honey, and I had to feed over 800 pounds of sugar syrup for winter.

Many apiarists of my region lost 40 to 50 percent of their colonies during the winter. Mine were put in the cellar Nov. 6, and were taken out April 28, 1916—171 days in the cellar.

This year, white clover was everywhere, in the meadows and the pastures. We had 15 rainy days in June and 5 in July. The crop began on July 1 and ended July 25 but in that short time my 112 colonies harvested nearly 9000 pounds of honey and increased to 160 strong colonies for winter. The colony on scales increased at several times 12 and 13 pounds per day. Its total increase in honey weight was 187 pounds. Of this, the storage in supers was 140 pounds. Some of our best colonies reached 200 pounds. How is that for 25 days of harvest?

JACQUES VERRET.

Charlesbourg, Quebec Sept. 5.

How to Prevent Robbing

I am 16 years of age and beginning beekeeping, and have a few colonies of my own. I have watched my bees continually, and as some bees were inclined to rob their neighbors I tried to devise some way to prevent this. I have a bottom board which extends about 3 or 3½ inches in front of the hive entrance (or a small porch) over which I placed a small board 1 or 1½ inches wide. As the robber bees try to sneak into the hive they have to alight and walk a short space; otherwise they would fly right inside or rush by the guards. This is not necessary except on a weak colony.

Hoping that this will perhaps benefit others, as I think it has helped me.

CAROL WEBER.

San Antonio, Tex., June 26.

[The idea expressed in this letter from one of our young lovers of the bee is correct. Anything which will compel the robbers to walk a few steps as they pass by the entrance guards will prevent robbing. A short tunnel made of lath, covering the entrance will serve a similar purpose. But the best thing in our opinion is a bunch of loose, fine grass thrown over the entrance. The guards station themselves in this and no robber can get by except where the colony is so utterly demoralized that they have no guards. Then, if the colony is worth saving, and if you can ascertain which is the robbing colony, the only safe thing to do is to "swap" them, place the one on the stand of the other. But if the robbed colony is queenless, it is best to break it up and give its bees to a neighboring hive.—EDITOR.]

The Iowa Beekeepers' Association will hold their fifth annual meeting at Des Moines, Dec. 5 and 6. Everybody who keeps bees or loves the bees, is invited to come and will be welcome. The meetings will be held in the Chamber of Commerce in the Shops Building, corner of Eighth and Walnut Sts.

Write for program and other information which will be mailed as soon as issued.

HAMLIN B. MILLER, Sec.-Treas.
Marshalltown, Iowa.

American Bee Journal

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

FINE three-banded Italian queens. Circular and price list free. J. L. Leath, Corinth, Miss.

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TRY my very best tested Caucasian. Italian queens at 75c each; hybrids at 25c each. Peter Schaffhauser, Havelock, N. C.

FOR SALE—From 40 to 60 colonies of Italian and hybrid bees. All in good shape. B. A. Manley, Milo, Iowa.

PLACE your order early to insure prompt service. Tested, \$1.25; untested \$1.00. Italians and Goldens. John W. Pharr, Berclair, Tex.

THE best Italian queen that can be had, \$1.00; 6 for \$5.00, June to November. J. W. Romberger, 3113 Locust St., St. Joseph, Mo.

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PHELPS' Golden Italian Bees are hustlers

VIGOROUS prolific Italian queens, \$1.00; 6, \$5.00. My circular gives best methods of introducing. A. V. Small, 2302 Agency Road, St. Joseph, Mo.

LEATHER COLORED "Nutmeg strain" of queens, \$1.00; doz., \$10. Tested, \$1.50. Special price on large lots. Return mail. A. W. Yates, 3 Chapman St., Hartford, Conn.

A LITTLE AD in our classified columns will sell that perfectly good equipment that you no longer need. Only 15 cents per line each insertion.

MY BRIGHT Italian queens will be ready to ship after April 1st at 60c each. Send for price list. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00. 2Atf J. B. Brockwell, Barnetts, Va.

FOR SALE—Good Italian queens, untested 75c; tested, \$1.00; nuclei, 2-frame, \$3.00; 1-lb. package, \$2.00; 2-lb. package, \$3.00. Untested queen with bees at above prices. Will begin to send about April 1st. G. W. Moon, 1004 Park Ave., Little Rock, Ark.

BEES FOR SALE—A number of well established apiaries in Frio, Bexar and Atascosa, Texas, in the mesquite and guajillo belt have been listed with us for sale on their present sites. Can also furnish bees in car lots. Southwestern Bee Co., San Antonio, Tex.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A2at 173 S. Water St., Chicago, Ill.

COMB HONEY our specialty. Highest market prices obtained. Consignments of Extracted Honey also solicited. Albert Hurt & Co., New Orleans, La.

FOR SALE—Clover honey of finest quality in new 60-lb cans at 8½ cts. per lb. Also Fancy and No. 1 clover honey, 4½x1% sections. Martin Carsmore, Ruthven, Iowa.

FOR SALE—1000 acres of farm fruit and pasture lands; partly improved. Sell all or part cheap. Also a lot of Italian bees for cash or exchange for honey. C. H. Cobb, Belleville, Ark.

FOR SALE—Our own crop of extracted white clover honey in barrels or cans. This is as fine quality white clover as we have ever seen. Write for prices and state quantity wanted. Dadant & Sons, Hamilton, Ill.

FOR SALE—Raspberry, basswood, No. 1 white comb, \$3.00 per case; fancy, \$3.25; 24 Danz. sections to case. Extracted, 120-lb. cases, 9c per lb. W. A. Latshaw Co., Clarion, Mich.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

No. 1 white comb \$3.50 per case; No. 2, \$3.00. No. 1 fall comb, \$3.00; No. 2, \$2.50; 24 sections to case. Extracted in 60 pound cans, clover, 9c; amber, 8c; amber in pails, 8, 10 pound or 12 5-pound to case at \$6.00 per case. H. G. Quirin, Bellevue, Ohio.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10. Tested Queens, \$1.25; dozen, \$12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Rt. 3, Williamstown, Ky.

HONEY WANTED—We are in the market for light amber grades of honey, also off grades which are suitable for baking. If you have such honey to offer, please send us sample, state the quantity you have, how packed and your lowest price for same. Dadant & Sons, Hamilton, Ill.

FOR SALE—65 cols. Italian bees \$4.00 per col.; 10 cols. hybrids, \$3.50 per col. All from J. T. Moore's strain, and in 8-frame hive bodies in winter cases; standard full depth self-spacing Hoffman frames, 8 to each hive, all combs straight; cols. strong and healthy with stores for winter; would bunch the lot for \$4.25 per col.; a few untested Italian queens, 60c each. Wilmer Clarke, Earlville, Mad. Co., N. Y.

SUPPLIES.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog. A. E. Burdick, Sunnyside, Wash.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., Greenville, Tex.

WANTED 300 wired extracting frames for 8-frame Hoffman hives; 5½ deep. Must be in good condition. State price. L. M. Johnson, L Box 77, Fortuna, Mo.

Q-C hive yields, on account of its protectiveness, equable temperature, brood-nest work incentive, etc., sixty pounds more than average of others. Can you afford to not test it? Address, W. F. McCready, Box 2, Estero, Fla.

HONEY LABELS

HONEY LABELS that have broken away from the all-look-alike bunch. Made to suit your ideas. Lowest prices. Samples FREE. Liberty Pub. Co., Sta. D, Box 4H, Cleveland, O.

MISCELLANEOUS

PRINTING FOR BEEKEEPERS—Noteheads envelopes, cards, tags etc. printed and post paid. 1000 of either, \$2.15; 500, \$1.30; 250, 95c. Fine stock and cuts used. Lowest prices in the United States. Complete line of samples and price list free. Rennecamp Printing Co., McKees Rocks, Pa.

HONEY AND BEESWAX

CHICAGO, Sept. 16.—The supply is heavy, but the quality is of the best where it has been properly ripened. Dealers are expecting to sell more than the usual quantities, as the flavor is of the kind that asks for the second helping. Extra fancy comb in sealed cartons, 16c per pound; fancy comb or not in sealed cartons, 15c per pound; No. 1, 14c; No. 2, 12½c. Extracted, white, in cans, 7½c per pound; light amber, 6½c; light amber in barrels, 6½c; amber in cans, 5½c; amber in barrels, 5½c. Beeswax, 30¢/32c if clean and yellow. R. A. BURNETT & Co.

CINCINNATI, Sept. 16.—The demand for comb honey is not as good as it was last season. We are selling No. 1 comb honey, 24 sections to the case, at \$3.75 per case; lower grades are not wanted at any price. White clover extracted honey in 60-pound cans at 7½c. Amber extracted in barrels from 6½c to 7½c. The above are our selling prices, and we buy at less than the above prices. We are paying 28c a pound for choice bright yellow beeswax. THE FRED W. MUTH COMPANY.

SAN ANTONIO, Sept. 14.—Stocks of honey, both bulk comb and extracted are getting very much lighter and prices continue to rule higher. Buyers are becoming excited over the possibility of not being able to supply their already booked orders, and there has been a distinct stiffening in prices received by producers. Bulk comb honey is nearing a 10c basis, and extracted honey is raising from 7½c, according to color and quality. Wholesale stocks are very light in Texas at present. Beeswax is still quoted at 25c cash and 27c exchange basis. SOUTHWESTERN BEE CO.

KANSAS CITY, Mo., Sept. 16.—The honey market here, on account of a large crop of native honey this year, is slow. Some Colorado honey is being shipped in here in car lots and is selling at \$3.00 per case. Native honey is being held at \$3.25, but it looks as though the market will decline to \$3.00.

There is a fairly good demand for extracted honey, same selling from 7½c for the dark amber to 8½c for white clover. C. C. CLEMONS PRODUCE COMPANY.

DENVER, Colo., Sept. 19.—We are selling new crop comb honey in the local market at the following jobbing prices: Fancy, per case of 24 sections, \$3.38. No. 1, \$3.15; No. 2, \$2.93. White extracted, 8½c per pound; light amber, 8½c per pound, and amber 7½c per pound. We pay 26c per pound in cash and 28c per pound in trade for clean, average yellow beeswax delivered here.

THE COLO. HONEY PRODUCERS' ASS'N
F. Rauchfuss, Mgr.

NEW YORK, Sept. 18.—The new crop of honey from nearby is now beginning to arrive in small lots, but the market is still unsettled, and prices are not firmly established. We are of the opinion that comb honey will sell as follows:

Number 1 and fancy white, 14½c; No. 2 and amber 12½c; buckwheat and dark, 10½c. Extracted white clover, 7½c; light amber, 6½c; buckwheat, 6½c; and West India honey continues to arrive quite freely and prices are ranging from 58¢ to 62c per gallon, according to quality. Beeswax is selling at 30¢ to 31c for domestic and 28¢ to 29c for West India.

HILDRETH & SEGELKEN.

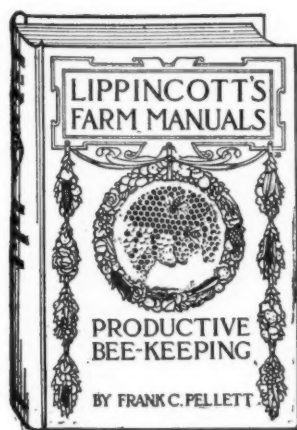
California Fair Building Burns

We have just received news that the Agricultural Building at the California State Fair burned with a total loss of building and contents amounting to about \$260,000.

All exhibitors of honey, bees, etc., lost everything and all valuable county exhibits were also destroyed. One exhibitor writing to us says, "We hope to do better next year." Evidently he has learned the value of advertising.

American Bee Journal

A BEE BOOK FOR THE PRACTICAL MAN IS "PRODUCTIVE BEEKEEPING," by Frank C. Pellett



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American Bee Journal, Hamilton, Illinois

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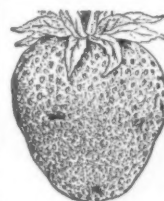
Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots of genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, \$1.00; or with a year's subscription to the American Bee Journal—both for \$1.80; or given FREE as a premium for sending us 3 New subscriptions at \$1.00 each.

American Bee Journal, Hamilton, Illinois.

Life of the Bee, by Materlinck.—This author, who is acknowledged by every one as one of the finest prose writers, applies the romantic side in discussing the honeybee. The book reads like a fairy tale, and it is as interesting as a novel. His knowledge of the traits of the bee is only fair; his aim being to discuss the romantic side of the queen, the drone and the swarm. The book is well bound and well gotten up, and is a pleasure for any one to read. Price, postpaid, \$1.40, or with the American Bee Journal, both for one year, \$2.00.

Beekeeping, by Dr. E. F. Phillips, In Charge of Bee Investigations at Washington, D. C., and an authority on the subject. This book has just been issued, and is of such a caliber that it should be in every beekeeper's library. It contains some of the later experiments, and has a very valuable chapter on wintering. A well bound, well illustrated and a good book. Price, \$2.00; postage extra. By special arrangement we can offer this book, postpaid, together with American Bee Journal one year, both for \$2.50.



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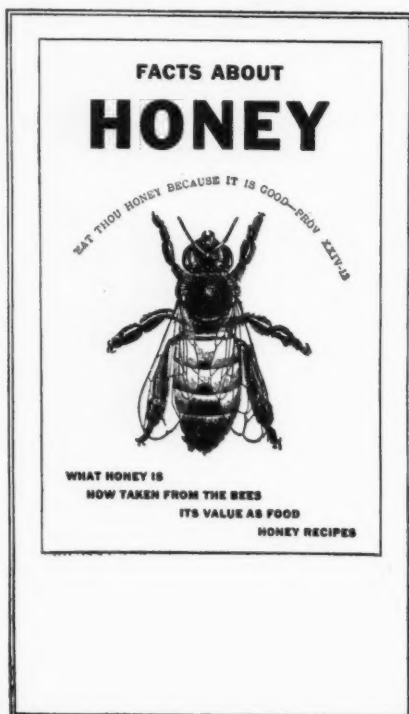
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Quinby's New Beekeeping, by L. C. Root.—This is a modern edition of "Quinby's Mysteries." Mr. Quinby is well known to all beekeepers. He, with Mr. Langstroth, was responsible for much of the early growth in beekeeping in America. Cloth bound, 220 pages. Price, postpaid, \$1.00, or with the American Bee Journal for one year, \$1.75.

Bee Primer for the prospective beekeeper or beginner. A 24-page pamphlet, finely gotten up, with illustrations. It gives a general outline of bees and beekeeping such as desired by the amateur. Two pages are devoted to instructions to beginners. Price, postpaid, 15 cents, or sent free with a year's subscription to American Bee Journal at \$1.00.

FACTS ABOUT HONEY



THE editorial on the "Food Value of Honey," on page 404, of the December American Bee Journal was so highly appreciated, and so many enquiries came for a reproduction of it in pamphlet form that there was prepared a 16-page booklet for advertising honey containing this and other matter of importance which the consumers ought to know. Size of booklet 5 3-4x9 inches. Weight a scant ounce.

"Facts about Honey" contains the following information illustrated with 17 splendid half tones: What honey is and where gathered; Principal kinds of honey; Different flavors and colors; How produced; Bee-trees and bee hunting; Bees in boxes and gums; The new way of honey production; Movable-frame hives and sections; Comb honey; Comb foundation; Why the bees build straight in the section; Chunk honey; Extracted honey, the honey extractor and manner of extracting; Purity of honey; Granulation of honey, how to melt it; Food value of honey; Is honey a luxury; Honey as health food; Uses in cook-

ing; Fifty recipes for use of honey.

On the last page room enough is left to print the beekeeper's name and the prices he asks for his honey. Or the address may be printed on the front cover page. At the bottom of the last page there is also room to address the booklet to the consumer, after folding it so that no envelope is needed. A gummed "Eat Honey" label or wire clasp is sufficient to hold it together for mailing.

We will furnish these pamphlets at unprecedented low prices, as follows:

Single copy as sample, free.		500 copies, postage extra	- \$ 5.00
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30 " " "	.75	2000 " " "	- 17.00
50 copies, postage extra	.75	5000 " " "	- 40.00
100 " " "	1.25	10,000 " " "	- 75.00

For parcel-post shipment, the weight is about 6 pounds per 100 copies.

Printing name and address of producer, with brief price-list of honey on either front or back page: 500 or less, \$1.00; 1000 or more, \$1.50 per thousand.

The pamphlet contains no advertising or address of any kind and is distinctly a positive, unbiased and clear explanation of the usefulness of honey, intended for a reply to the numerous questions usually asked by the uninformed consumer. Send your orders to

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Queens and Bees

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Will and must please you. Three-band Italians only. Prices from May 1st to July 1st as follows: Queens, untested, 75c each; \$4.00 for six or \$7.50 per dozen. Tested \$1.00 each; \$5.70 for six, or \$10.75 per dozen. Select tested, \$2.50 each. Breeding queens, \$5.00 each. One pound package bees, \$1.25; 25 packages, \$1.00 each; 2-pound package, \$2.25 each; 25 packages, \$2.00 each; 3-pound package, \$3.25 each; 25 packages, \$2.75 each.

Special prices on larger quantities booked early. Twenty years experience. No disease. 75 percent of untested queens guaranteed purely mated. Safe arrival and reasonable satisfaction guaranteed.

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